
ALASKA RETIREMENT MANAGEMENT BOARD

BOARD OF TRUSTEES
AGENDA

March 2-3, 2017

Meeting in the
Egan Room
Centennial Hall
101 Egan Drive
Juneau, Alaska

Thursday, March 2, 2017

- I. 9:00 am Call to Order
- II. Roll Call
- III. Public Meeting Notice
- IV. Approval of Agenda
- V. Communications, Public/Member Participation, and Appearances
(Three Minute Limit)
- VI. Approval of Minutes: December 8-9, 2016
- VII. 9:10 Reports
 - 1. Chair Report
 - 2. Committee Reports
 - A. Audit Committee, *Rob Johnson, Chair*
 - B. Actuarial Committee, *Kris Erchinger, Chair*
 - C. DC Plan Committee, *Bob Williams, Chair*
 - 3. Division of Retirement & Benefits Report
 - A. Membership Statistics/Buck Invoices/HRA Rates
 - B. Legislative Update
Kevin Worley Chief Financial Officer, DRB
Ajay Desai, Director, DRB
 - 4. Treasury Division Report, *Pamela Leary, Director*
Action: Res 2017-01 Delegation of Authority
Information: Review Actuary RFP
 - 5. Chief Investment Officer Report
Bob Mitchell, Acting Chief Investment Officer
- 9:45-10:00 6. Fund Financial Report
Kayla Wisner, State Accountant, DOR
Kevin Worley, Chief Financial Officer, DRB
- 10:00-10:30 7. Analytic Investors
Kevin Clark, Greg McMurren, and Megan Miller

*10:30 - Break
10 Minutes*

10:40-11:10 8. DePrince Race Zollo
Greg Ramsby and Kelly Carbone

11:15-11:45 9. Zebra Capital Management
Roger Ibbotson and John Holmgren

Lunch - 11:45 - 1:15 pm

1:15-1:45 10. T Rowe Price
*Chris Dyer, Charles Shriver, Toby Thompson and
John Plowright*

1:45-3:15 11. Capital Markets Assumptions
Paul Erlendson and Steve Center, Callan Associates Inc.

*3:15 Break
15 Minutes*

3:30-4:00 12. Tortoise Capital Advisors
Greg Murphy

4:05-4:35 13. Advisory Research Inc.
Jim Cunnane and Quinn Kiley

Friday, March 3, 2017

- 9:00-9:30 14. Schroders Investment Management
Jamie Macmillan and Richard Sennett
- 9:35-10:05 15. Mondrian Investment Partners
Aidan Nicholson and Todd Rittenhouse
- 10:10-10:40 16. Fixed Income Update
Bob Mitchell, Acting Chief Investment Officer
Victor Djajalie, Fixed Income Manager

10:40 - Break
10 Minutes

- 10:50-11:10 17. Investment Actions/Information
- A. Absolute Return Manager
 - B. Alternative Beta Search
 - C. DC Plan Report Recommendations
- Bob Mitchell, Acting Chief Investment Officer*

- VIII. Unfinished Business
- 1. Disclosure Reports
 - 2. Meeting Schedule
 - 3. Legal Report
- IX. New Business
- X. Other Matters to Properly Come Before the Board
- XI. Public/Member Comments
- XII. Investment Advisory Council Comments
- XIII. Trustee Comments
- XIV. Future Agenda Items
- XV. Adjournment

(Times are approximate. Every attempt will be made to stay on schedule; however, adjustments may be made.)

**State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
MEETING**

Location:
Dena'Ina Convention Center
600 West Seventh Avenue
Anchorage, Alaska

**MINUTES OF
December 8-9, 2016**

Thursday, December 8, 2016

CALL TO ORDER

CHAIR GAIL SCHUBERT called the meeting of the Alaska Retirement Management Board (ARMB) to order at 9:03 a.m.

ROLL CALL

Nine ARMB trustees were present at roll call to form a quorum.

Board Members Present

Gail Schubert, *Chair*
Robert Johnson, *Vice Chair*
Gayle Harbo, *Secretary*
Kristin Erchinger
Commissioner Sheldon Fisher
Commissioner Randy Hoffbeck
Tom Brice
Norman West
Bob Williams

Investment Advisory Council Members Present

Dr. William Jennings

Department of Revenue Staff Present

Gary M. Bader, Chief Investment Officer
Scott Jones, State Comptroller
Pamela Leary, Director, Treasury Division
Judy Hall, Board Liaison

Department of Administration Staff Present

Kevin Worley, Chief Financial Officer, Division of Retirement & Benefits (DRB)
Ryan Colgan, Deputy Commissioner, Department of Administration

Consultants, Invited Participants, and Others Present

Ray Edelman, Allianz Global
Melody McDonald, Allianz Global
Steven Center, Callan Associates, Inc.
Paul Erlendson, Callan Associates, Inc.
Gary Robertson, Callan Associates, Inc.
Stuart Goering, Department of Law, Assistant Attorney General
John Borne, Empower
Liz Davidson, Empower
Beau Coash, Fidelity Institutional Asset Management
Kristin Shofner, Fidelity Institutional Asset Management
Melissa Beedle, KPMG
Daniel Mitchell, KPMG
James Donald, Lazard Asset Management
Tony Dote, Lazard Asset Management
Rob Gillam, McKinley Capital Management
Alex Slivka, McKinley Capital Management
Sharon Hoffbeck, Retired Public Employees of Alaska
Brad Owens, Retired Public Employees of Alaska
Frank Alonso, T.Rowe Price
John Plowright, T.Rowe Price
Michele Ward, T.Rowe Price

PUBLIC MEETING NOTICE

JUDY HALL, Board Liaison, confirmed that public meeting notice requirements had been met.

APPROVAL OF AGENDA

MRS. HARBO moved to approve the agenda. MS. ERCHINGER seconded the motion.

GARY BADER, Chief Investment Officer, requested to amend the agenda, withdrawing Item 12b. Scientific Beta International Mandate.

The agenda was approved as amended.

PUBLIC/MEMBER PARTICIPATION, COMMUNICATIONS, AND APPEARANCES

BRAD OWENS noted he and SHARON HOFFBECK were present on behalf of the Retired Public Employees of Alaska (RPEA). MR. OWENS expressed appreciation to the Board for opposing the merger of the ARM Board investment functions with the Permanent Fund Corporation and was relieved the decision not to merge was finalized.

MR. OWENS noted the Supreme Court made a ruling yesterday declaring dental, visual, and audio benefits are constitutionally protected and are subject to the Duncan decision. MR.

OWENS expressed RPEA's concerns about the lack of adequate oversight and supervision of the current third-party administrators, both Aetna and Moda, particularly in the area of increasing administration costs. MR. OWENS informed RPEA will continue to advocate for further oversight and assistance by the ARM Board to fill the fiduciary duties to ensure the administration costs are disclosed and proper.

COMMISSIONER FISHER noted, for the record, the administrative costs have been increasing because of the strategy to expand network savings. This effort has resulted in a decrease in overall costs. COMMISSIONER FISHER offered to make a presentation before the Board to show the context and management of the administrative costs.

APPROVAL OF MINUTES: September 29 - 30, 2016

MRS. HARBO moved to approve the minutes of the September 29 - 30, 2016 meeting. MR. WEST seconded the motion.

The minutes were approved.

ELECTION OF OFFICERS

MS. ERCHINGER moved to nominate and approve by unanimous consent the existing officers to serve another term; Chair Gail Schubert in the position of Chair, Rob Johnson in the position of Vice-Chair, and Gayle Harbo in the position of Secretary. The motion was seconded.

The motion passed unanimously.

REPORTS

1. CHAIR REPORT

None

2. COMMITTEE REPORTS

A. Audit Committee

VICE-CHAIR JOHNSON reported the Audit Committee met on November 14th and the day before the Board meeting. The financial statements prepared by KPMG were reviewed at both meetings and resulted in a clean opinion. KPMG will provide a full presentation of the financial statements later in the agenda. VICE-CHAIR JOHNSON reported Aetna has been very slow in providing information of expenses, claims made, and claims paid to reviewers and auditors. He informed DRB and KPMG are working with Aetna to resolve these problems.

B. Actuarial Committee

MS. ERCHINGER reported the Actuarial Committee met the day before the Board meeting and reviewed the first draft of the Actuarial Committee manual being developed with Gabriel Roeder Smith (GRS). The process was previously approved by the Board. MS. ERCHINGER expressed appreciation to GRS and staff for their efforts thus far. The manual will memorialize actuarial assumptions, methods, as well as the reasoning behind the features currently utilized in the plan. MS. ERCHINGER encouraged members to provide input. She noted the manual is a work in progress and completion of the manual will take time. The next Actuarial meeting will focus on the actuarial valuation report.

C. Defined Contribution Plan Committee

MR. WILLIAMS reported the Defined Contribution Committee met and heard a presentation by KATHY LEA, Chief Pension Officer, regarding the new "Stay in the Plan" campaign, and a presentation by Empower about user interface data. MR. WILLIAMS believes it is important to continue the work on strengthening plan options and providing information to users. He expressed appreciation to MARK ROSE for presenting at a recent employment/retirement fair in Mat-Su.

MR. BRICE commended the efforts by Department of Administration to extend deferred compensation services to municipal employers and other employers in the system.

KEVIN WORLEY, Chief Financial Officer, DRB, noted JOHN BORNE and LIZ DAVIDSON from Empower are attending in the audience.

3. RETIREMENT & BENEFITS DIVISION REPORT

A. Membership Statistics

MR. WORLEY reviewed the Retirement System Membership Activity Report for the first quarter ended September 30th, 2016. For PERS, the total DB membership is approximately 16,000 and DC membership is approximately 18,800. For TRS, the total DB membership and DC membership is approximately at a 50/50 ratio.

B. Buck Consulting Invoices

MR. WORLEY reported on the Buck Consultants invoices ended September 30th, 2016, with a three-month comparison for September 30, 2015. The actuarial valuations are in progress and on schedule. The GASB 68 report for PERS and TRS was completed in October and GASB 67 was a big item. Once the audits are complete, the information will be provided to Buck to use in the next round of valuations.

4. TREASURY DIVISION REPORT

Treasury Division Director PAMELA LEARY reported that the FY18 ARMB budget was submitted to OMB. The Governor's budget plan will be issued December 15th and is

expected to cover the proposed budget. MS. LEARY commented on the transmittal letter each Board member received prepared jointly by COMMISSIONER HOFFBECK and Executive Director ANGELA RODELL regarding the KPMG report on the potential merger analysis of APFC and Department of Revenue's Treasury Division, which was sent to both the Senate and House Finance Co-Chairs. A reply is anticipated to be received during the legislative session.

5. CIO REPORT

MR. BADER noted one item that did not make into the CIO report was the commitment of \$50 million to Neuberger Berman Dyal Capital Partners III in conformance with Board policy. MR. BADER discussed each of the 14 transaction items provided in the CIO Report. Copies of the specific documents are available for the Board's review.

MR. BADER asked for a motion to remove Cap Guardian from the watch list. Their performance has exceeded the guidelines for being placed on the watch list.

MRS. HARBO moved to remove Cap Guardian from the watch list. MS. ERCHINGER seconded the motion.

The motion passed unanimously.

MR. BADER informed the Board of his intent to retire effective February 1st, 2016, and hopes the Board will call on him to contribute from time-to-time. MR. BADER expressed his appreciation to the five Commissioners of Revenue, who gave him their full support, in terms of managing the investment of the State funds. He expressed appreciation to his incomparable staff for their full support. MR. BADER expressed appreciation to Board members for being business-like, but not self-important, and for respecting the staff, while holding the staff accountable. MR. BADER commented because of how the Board conducts business, he is envied by his fellow CIOs.

MR. BADER specifically thanked COMMISSIONER HOFFBECK for allowing him to continue to work in what he considers the best position in the Department of Revenue. MR. BADER expressed his thanks to CHAIR SCHUBERT for her leadership and support during the 20 years working together, and finally, to the Board collectively for all they do for the citizens of Alaska and for the retirees.

CHAIR SCHUBERT stated it has been a pleasure working with MR. BADER, who has given his staff the freedom to develop the promise from within and to succeed. She believes this is an important asset of a leader and expressed her appreciation to MR. BADER for his service.

VICE-CHAIR JOHNSON noted he has had the pleasure of working with MR. BADER throughout the term on the ARM Board, predecessor Boards, and as far back as being the Director of Retirement and Benefits. VICE-CHAIR JOHNSON expressed the State will be poorer not having MR. BADER at his leadership level. VICE-CHAIR JOHNSON hopes MR. BADER will continue to provide advice to the Board in the future.

MR. BRICE commented on MR. BADER'S integrity, insights, and work ethic in maintaining support of the diverse philosophies of five Commissioners of Revenue. MR. BRICE thanked MR. BADER for his diligent work.

COMMISSIONER HOFFBECK expressed it has been a comfort having MR. BADER as CIO and appreciates the frank and informative investment discussions over the years. COMMISSIONER HOFFBECK thanked MR. BADER for his professionalism, dedication, and for leaving the ARM Board and the Treasury in a good position by mentoring his very capable staff.

MR. WILLIAMS thanked MR. BADER for being friendly, welcoming, and mentoring during his new role on the Board. MR. WILLIAMS expressed appreciation to MR. BADER for his public service, commitment, stewardship, and ethical leadership.

6. FUND FINANCIAL PRESENTATION AND CASH FLOW UPDATE

State Comptroller SCOTT JONES and Chief Financial Officer of the Division of Retirement and Benefits KEVIN WORLEY presented the Fund Financial Report. MR. JONES reviewed the financial statements for the month ended October 31st, 2016, and fiscal year-to-date. The approximate numbers are: the PERS system ended with \$16.3 billion, the TRS system with \$8 billion, the JRS with \$179 million, the National Guard and Naval Militia (NGNMRS) with \$36.7 million, SBS with \$3.46 billion, and Deferred Comp with \$816 million, for a total of \$28.76 billion, of which \$23.5 billion is nonparticipant-directed assets and \$5.1 billion is participant-directed assets. This is a year-to-date change of about 1.79%. All of the funds are close to targets and within the asset allocation bands. MR. JONES noted as of December to-date, the assets are up 3.35%.

MR. WORLEY reported through the month of October, \$3.5 million of medical RDS rebates have been received and allocated between the health trust funds under other income. The pharmacy rebates from Aetna are also included under other income. MR. WORLEY informed most of the participant-directed disbursements reported on page three are as a result of separation of service and retirement.

7. PRIVATE EQUITY REVIEW

CHAIR SCHUBERT introduced GARY ROBERTSON from Callan Associates, Inc., who gave the Private Equity Review presentation. He noted the format is the same as in prior years, with the inclusion of an overview for new Trustees describing how cash flows through the private equity portfolio. MR. ROBERTSON described each of the five major private corporate finance strategies in which the ARMB invests; venture capital, buyouts, special situations, subordinated debt, and distressed debt. He explained the long time span utilized in building the private equity portfolio and the distribution pattern bell curve over time.

MR. ROBERTSON discussed there are two external oversight managers, Abbott and Pathway, and an in-house portfolio with oversight management by staff. He described the

private equity portfolio as ebullient last year, returning 13% in total appreciation, and good this year, returning 5% in total appreciation. The environment this year has been more challenging. Cash flows have been strong and valuations have been flat. The portfolio is well-positioned for the uncertain future with good funding for both up and down markets. The portfolio is 19 years old and has been through about two-and-a-half business cycles. The allocation began at 3% and has risen to a target of 9%. The funded level of the portfolio is within 1% of the target.

MR. ROBERTSON gave a detailed review of the changes from FY15 to FY16 regarding the ARMB private equity portfolio. Committed capital increased 12% in 2016 compared to 16% in 2015, paid-in was at 9% compared to 13% last year, uncalled was at 19% versus 27% last year, and distributed NAV remained about the same at 23%. The cumulative DPI is within \$75,000 of being cash flow positive, which means the portfolio has received 98 cents back for every dollar put in. The RVPI takes the net asset value and divides it by the paid-in, producing 48 cents of unrealized value in the portfolio. The TVPI, total value to paid-in, is \$1.46 created for every \$1 paid in to-date. Using the private market equivalent calculation, the portfolio's IRR over time is 10.8% compared to the Russell 3000 of 6.9% over the same period of time. The premium amounts to an excess of \$922 million.

MR. ROBERTSON described the portfolio relative to its peers within the Cambridge Index of professionally managed partnerships as above median and in the second quartile. He reported the in-house portfolio added four partnerships this year for a total of 17 partnerships. There is a nice array of finance strategies with an emphasis on mezzanine and distressed debt.

MR. BADER requested the explanation of a J-curve for new Board members. MR. ROBERTSON explained a J-curve is a phenomenon where capital is committed to a partnership and fees are being paid on the full amount of the commitment. The portfolio could have a negative return for the first three to four years until the corpus of the portfolio is built and the valuation increases. He gave an analogy of a real estate project with initial construction costs, then tenants, then returning cash flow, and ultimately, the sale of the asset. MR. ROBERTSON advised the in-house portfolio is still relatively new and did not receive positive cash flow this year. The in-house portfolio had a negative 3% cost for funding this year.

MR. ROBERTSON noted fundraising in private equity is currently robust, producing a hot market. Pricing is high. Exits are good. Credit is available for buyouts. However, regulators have capped the banks and lending institutions from participating in deals that are more than six times earnings before interest, taxes, depreciation and amortization, EBITDA, which may have an effect on future returns.

COMMISSIONER FISHER asked if there is anything staff needs to do to position for a market drawback. MR. ROBERTSON noted investment activity in the private equity portfolio will stop if there is a slowdown in the market and the public portfolio will decrease more than the private equity portfolio. MR. ROBERTSON advised against selling at a deep discount in the secondary market during times of recession. He noted the in-house portfolio strategy participates in the secondary market when purchasing.

MR. WILLIAMS requested clarification on what is meant by "encouraging clients to be mindful of the denominator effect." MR. WILLIAMS noted his understanding of the denominator effect is when the overall portfolio decreases and private equity becomes a larger portion of the portfolio. MR. ROBERTSON agreed and explained being mindful is in reference to being prepared for the denominator effect. MR. ROBERTSON believes staff is disciplined and has laid out a sensible and balanced commitment budget.

CHAIR SCHUBERT recessed the meeting from 10:32 a.m. to 10:49 a.m.

8. KPMG - Audit Report

CHAIR SCHUBERT welcomed DANIEL MITCHELL and MELISSA BEEDLE from KPMG, who provided the audit results for the year-ended June 30, 2016. MR. MITCHELL informed the results of the audit were reviewed in detail yesterday at the Audit Committee meeting. The presentation today are the highlights of the items discussed and include the audit status, significant findings or issues from the audit, KPMG's Audit Committee Institute, and appendices.

MR. MITCHELL advised KPMG expects to issue unmodified, clean opinions on the financial statements and supplemental schedules for all of the systems; PERS, TRS, JRS, NGNMRS, SBS, and the DC Plan. There were no significant changes to the audit plan presented to the Audit Committee on June 22, 2016. The pending matters as of November 30, 2016, need to be resolved before KPMG can conclude and issue the ordered opinions. The pending matters are actively being addressed with management and are expected to be remedied within seven days. MR. MITCHELL gave a description of each of the remaining pending matters, which relate to health claims testwork, National Guard and naval Militia Retirement System lump sum distribution calculation, and the second partner final review.

MR. MITCHELL continued the presentation outlining the significant findings or issues from the audit. He noted these were areas of interest on which KPMG spent significant time. The accuracy of contributions was verified and no issues were identified. The valuation of alternative investments was analyzed and no issues were identified. The valuation of benefit plan obligations including IBNR was tested for completeness and accuracy, and no exceptions were found. The employee census testing of 20 PERS employers and 490 employees, and 15 TRS employers and 360 employees resulted in issues that are not considered material differences. The issues encountered were 47 incorrect marital status items, two incorrect original date-of-hire items, and one incorrect designation of employee sex. There were no pensionable wage differences.

VICE-CHAIR JOHNSON requested a brief overview of the discussion with the Actuary Committee regarding KPMG's review of the 8% rate of return used by the actuary. MR. MITCHELL informed KPMG utilizes their own actuaries to review plan assumptions for the benefit obligations to determine if the assumptions are reasonable and consistent with plans throughout the United States. MR. MITCHELL noted KPMG challenges the 8% return and considers it a little high compared to some of the other pension plans across the country.

Time was spent as a group, with management, plan actuaries, and KPMG actuaries discussing why the rate is 8%, as opposed to 7.5%. MR. MITCHELL informed KPMG was able to get comfortable with the 8% return after much deliberation and understanding of the composition of the portfolio and the expected investment returns over the long-term. MR. MITCHELL stated it is to be expected the 8% return will be challenged again in the future and will consider any disconfirming audit evidence.

MR. MITCHELL reported there were no corrected misstatements identified during the audit. The only uncorrected misstatement was the difference in valuation of alternative investments between year-end and the lag period used to record investments. The net effect across all plans was \$30 million and clearly not material, given the size of the portfolio. No significant deficiencies or material weaknesses in internal control were identified. Analysis of the documentation of a discount rate is still occurring, but will not result in an audit adjustment.

MR. MITCHELL reviewed the other matters KPMG is required to communicate to the Audit Committee and to the Board. There were no related-party transactions, no litigations, claims, and assessments, no illegal acts or fraud, no noncompliance with laws and regulations, and no going concern. With respect to other information in documents contained with the audited financial statements, KPMG will review the draft CAFR when it is available.

MR. MITCHELL noted the delays in receiving claim support from Aetna is listed under significant difficulties encountered during the audit. He informed the delays from Aetna have been a challenge in the past and management is working together to develop an efficient process for next year. MR. MITCHELL informed Aetna reacted with an unusual push-back regarding the sample sizes and did not want to provide more than 50 claims. MR. MITCHELL discussed he is not comfortable auditing only 50 claims for a plan of this size. This issue is important to bring to the Board's attention and staff is preparing to assist in making the audit process more efficient next year.

MR. WILLIAMS asked if Aetna provided any rationale for the delay in claims data and if they showed remorse for the delay. MR. MITCHELL stated he has not had any direct conversations with Aetna management. He believes the pattern of push-back like this seen at very large service providers is rooted in high account management turnover and not receiving the right level of client attention. MR. MITCHELL is hopeful Aetna's remorse will be shown by providing the last of the information over the next few days that is needed to move through the final stages of the audit. MR. MITCHELL noted VICE-CHAIR JOHNSON offered the suggestion yesterday the Audit Committee could send correspondence requesting a change in the customer care.

MR. MITCHELL reviewed the items with the finding of no matters to report. There were no disagreements with management, no management's consultation with other accountants, no significant issues discussed, or subject to correspondence, with management, no alternative accounting treatments discussed with management, and no other findings or issues relevant regarding oversight or the financial reporting process.

VICE-CHAIR JOHNSON requested MR. MITCHELL discuss with the Board the comments made with respect to clarifying language in the draft financial statements. MR. MITCHELL advised GASB requires a plan disclose whether the plan does or whether the plan does not have policies regarding certain types of investment risks, including interest rate risk. The statement of fact does not indicate a deficiency, nor is it a red flag to the readers. MR. MITCHELL noted disclosures are consistent with what he has seen at other entities. He believes the Audit Committee is considering the issue and it is worth further discussion.

MS. ERCHINGER commented on a few items discussed at the Committee meeting. One item was a recommendation to include the sample size that will be requested in the third-party administration RFP so the costs of supplying the data are included within the response. A second item discussed was the challenge by KPMG regarding the 8% return assumption the Board has adopted and continues to support. The Board reviews the asset allocation regularly, which is the driver of the return assumption. An inflation assumption of 3.12% is embedded in the return assumption, making the net real return assumption 4.88%.

MR. MITCHELL encouraged the Board members to explore the resources of KPMG's Audit Committee Institute providing insights to the hot topics being discussed in audit committees and on board agendas across the country. MR. MITCHELL gave an overview of the detailed list of responsibilities for management, the Audit Committee, management and the Audit Committee collectively, and for KPMG.

MR. MITCHELL informed this is his first year as partner on the account. He is pleased with the quality of questions from the active Audit Committee and believes meaningful interaction occurred.

CHAIR SCHUBERT commented she liked the format of the presentation and it was easy to follow.

9. PERFORMANCE MEASUREMENT - 3RD QUARTER

CHAIR SCHUBERT introduced PAUL ERLENDSON, Senior Vice President, and STEVE CENTER, Vice President, of Callan, who provided the review of the performance measurement for the third quarter 2016. MR. CENTER echoed the Board's comments regarding the pleasure of working with MR. BADER and how he will be missed. MR. ERLENDSON began the presentation by asking the Board if any specific questions need to be addressed. VICE-CHAIR JOHNSON requested comments regarding the recent election and projections from the results.

MR. ERLENDSON believes there is much idle speculation about increased infrastructure spending, tax cuts flowing through to consumers, increased debt during a time of potentially increasing interest rates, and possible rising inflation. MR. ERLENDSON noted talk about interest rates rising has been occurring for a long time, and unless interest rates go negative, they are likely to go up. Interest rates are slightly higher than they were a year ago and are still at a historically low basis. The new Administration may be able to expedite some of the recent trends that will be discussed during the presentation.

MR. ERLENDSON gave a broad overview of the markets as of September 30th, and noted the quarterly real growth in the economy, growth minus inflation, has been fairly positive since the end of the recession in 2009. Inflation has remained under 3%. The official unemployment rate, as of the end of November, is down to about 4.6%. MR. ERLENDSON commented one of the real challenges going forward is the nature of jobs for people going into the workforce. He reviewed the findings of a study by the Georgetown University Center on Education and the Workforce entitled "America's Divided Recovery, College Haves and Have-Nots." MR. ERLENDSON stated he will email a copy to MR. BADER for distribution. During the period of recession, which is measured from December 2007 through January 2010, people with high school degrees or less education lost 5.6 million jobs. Since the end of 2015, only 2% or 80,000 jobs for that education level were created.

MR. ERLENDSON continued the description of findings stating industrial production has been fairly strong, but industrial production is performed by people who know how to operate computers. Fewer people are needed to produce the same amount of output, which challenges efficiency growth and changes the nature of the workforce required to fill the jobs. During the period of recession, people with a Bachelors degree or higher had a net increase of about 185,000 jobs. Since the end of 2015, 4.6 million jobs were created for people with college degrees or higher. This will result in a social and educational challenge going forward.

MR. ERLENDSON informed payroll growth through the end of November has averaged around 180,000 jobs a month. The economy being handed off to the incoming Administration is arguably much better than the economy handed to the incumbent. Growth in average hourly earnings is up 2.5% through November and the participation rate is close to 6.62%.

MR. ERLENDSON reviewed the asset class performance for the periods ending September 30th, for 10-year, five-year, three-year, one-year, and last quarter. Domestic equities were in the top two performers of each of those time periods. Emerging markets had incredibly low returns over the same 10-year time period, but over the last quarter and one-year, emerging markets have had a full reversal to the strongest performing asset class. MR. ERLENDSON showed the U.S. equity returns by economic sector. Technology was the strongest performer and materials is becoming stronger. MR. ERLENDSON noted materials looks more interesting because of the recent discussions of increased infrastructure spending and making commodities.

MR. ERLENDSON provided updated year-to-date performance returns through December 2nd, 2016. The Russell 3000 returned 10.2%. The S&P 500 returned 9.4%. The Russell 2000 returned 17.3%. The Aggregated Bond Index returned 2.4%. MR. ERLENDSON noted staff has been very good in maintaining their discipline to rebalance. The value style was the strongest style over the year-ended September 30, 2016.

MR. ERLENDSON discussed the ACWI ex US includes all countries except the U.S., and was up almost 7% for the year-ended September 30, 2016. The effect of currency and the strengthening dollar over the last five years has cost the investor almost 4% of the return. Over the last year, the currency effect has reversed and the dollar has weakened, adding 2% to

the investor's return. MR. ERLENDSON believes this is partially due to the strength in the Japanese yen post-Brexit. He discussed the impact of currency on the portfolio's non-U.S. equity investments and the non-dollar bond investments is going to be a very important issue going forward.

MR. ERLENDSON reviewed U.S. interest rates and the yield curve. Rates have risen slightly by 15 basis points from last year, but are still below average. The difficulty remains in creating capital market projections using bond returns because of the unknown effects to interest rates from inflationary forces, full employment, and potentially less global trade. MR. ERLENDSON reported corporate treasurers have been increasing the amount of debt issued each year for the last five years. In 2015, \$1.5 trillion in new debt was issued by corporate treasurers. The duration of the loans is at an all-time high of 17 years.

MR. CENTER continued the presentation focussing on the PERS plan as a proxy for all of the plans. Asset allocation is mostly in-line with the long-term strategic targets, with a slight overweight to global equities and a slight underweight to fixed income and private equity.

MR. CENTER reported the performance of the portfolio over the last quarter returned 3.74% versus the target of 3.84%. Over the last year, the total portfolio returned 9.5% versus the target of 10.11%. MR. ERLENDSON commented the largest difference in return was private equity and if the private equity effect was pulled out, the portfolio would be ahead of its benchmark. MR. CENTER explained there is no perfect benchmark for private equity, given the nature of the asset class. The private equity benchmark used for the portfolio is a blend of public equity benchmarks.

MR. CENTER discussed the plan's performance has tracked the plan's target fairly closely over time. The plan's performance relative to the actuarial return has continued to gain ground since the dip in performance below the actuarial return during the financial crisis. The recent dip in performance in the third quarter of 2015 was primarily driven by non-U.S. equity performance and has since shown an uptick in performance. MR. CENTER believes the trend will continue and would not be surprised to see the fund performance and actuarial return lines converge over time.

MR. CENTER reported on the plans relative to peers and noted the plans ranked in the top quartile over the last quarter, close to median over the last year, above median over three years, five years, and seven years, and under median for 10 years and 25 years. MR. CENTER noted the long-term performance of under median relative to peers is primarily driven by asset allocation differences relative to peers of an underweight in fixed income and an overweight to non-U.S. equities. Performance relative to the target over the last 10 and 25 years has been close to or ahead of its target.

COMMISSIONER FISHER asked if the plans have suffered more volatility than peers because of the underweight to fixed income. MR. CENTER agreed in theory, but does not have the specific chart showing the information and will provide this information to the Board at a later time.

MR. CENTER reviewed the asset class performance and noted the PERS domestic equity program had a strong quarter at 4.35%. Over the last three years, the domestic equity performance is about median and has tracked closely to the benchmark over the long-term. Both active large cap and active small cap performed well and added to performance for the last quarter. Alternative equity was a performance laggard last quarter, but continued to mute overall volatility.

MR. BADER requested a brief examination of factor-based investing. MR. ERLENDSON noted Callan's GENE PODKAMINER is a common presence on the factor-based presentation circuit, is skeptical in his perspectives, and believes this active approach will work in some periods and will not be favored in others. As with any sensible approach to investing, the number one issue is to be able to take a five or six-year period in order to determine if the approach is working. The focus on high dividend-paying stocks has done well through the recovery. MR. ERLENDSON believes factor-based investing is expected to be additive over the long-run to dampen the volatility of the overall portfolio.

MR. CENTER reported the total international equity portfolio, including both developed and emerging markets, came in at 6.96% for the quarter, extremely close to the MSCI ACWIxUS Index. Over the last year, performance is ahead of the benchmark and at the median of the peer group. Long-term performance compares favorably versus the benchmark.

MR. CENTER reviewed the strong quarter for the total fixed income pool, returning 1.3% above its custom target. Last year was strong with much of the performance driven by the productive allocation to the taxable muni space, returning over 13%. The allocations to high yield have done fairly well and have rallied over the last nine months.

CHAIR SCHUBERT recessed the meeting from 11:55 a.m. to 1:18 p.m.

MR. CENTER continued the presentation reviewing the preliminary real estate returns, which are tracked by the real estate consultant and have not yet been finalized. He noted the NCREIF Property Index came in at 1.8% last quarter, which was the lowest return in approximately four years. Price appreciation in real estate has begun to slow rather substantially over the last six quarters, even though returns have remained positive. MLP investments have continued to rally and are ahead of the benchmark. The return on infrastructure has been positive over the last year. This is one of the areas the President-Elect is focusing on and having the dedicated allocation continues to make sense over time.

MR. CENTER informed the absolute return portfolio came in ahead of the target last quarter, but behind the HFRI Fund of Funds composite. Over the last three years, the absolute return program has performed quite well, ranking at the 30% percentile within the peer group.

MR. ERLENDSON gave an overview of the enhanced performance reporting the Board requested Callan provide for the defined contribution plans. He explained the analytics on the macro level and noted performance books were developed for each of the individual plans. The pie chart reflecting assets is designated Tier I at 61%, which includes multi-asset professionally managed plans and target date funds, Tier II at 36%, which includes both

active and passive management, and Tier III at 3%, which includes noncore specialty options. The individual offerings in each of the tiers were listed. MR. ERLENDSON informed the net withdrawal in the third quarter of the calendar year was \$10,247,000.

MR. ERLENDSON described the illustration showing the changes over the most recent five calendar quarters of the values of the fund representing contributions, investment returns of gains and losses, and withdrawals/distributions. MR. ERLENDSON gave a breakdown of the investment tiers contributions were distributed to for the Defined Contribution plans and the Deferred Compensation plan. In general, about 70% of the Defined Contribution plans' contributions went into the Tier I investments and about 3% went into Tier III investments. About 35% of the Deferred Compensation contributions went into the Tier I investments and about 8% went into Tier III Investments.

MR. WILLIAMS asked if there is a sense of how much of the participant investments were purposeful compared to default placements. MR. ERLENDSON stated Callan does not have access to that information. MR. BADER believes default settings play a role in the difference of the plan investment allocations.

MRS. HARBO requested a clarifying title change from all ARM Board DC Plans to Participant-Directed Funds. She notes the confusion with Defined Contribution Retirement System and DC Plans. MR. ERLENDSON agreed to the change. MRS. HARBO requested another clarification title change from the use of Tier I, Tier II, and Tier III for the investment fund options to another word because the State of Alaska already uses Tier I, Tier II, and Tier III as part of the retirement system, which could cause confusion. MR. ERLENDSON stated he will work with staff to determine a different naming convention to avoid the problem identified.

MR. CENTER invited and encouraged Board members to attend Callan's National Conference in San Francisco on January 23rd through January 25th. Topics will include the economy, defined contribution trends, and behavioral finance.

11. ALLIANZ GLOBAL - Large Cap

CHAIR SCHUBERT introduced MELODY MCDONALD, Senior Relationship Manager, and RAY EDELMAN, Senior Portfolio Manager, of Allianz Global Investors, who provided a presentation on the Large Cap Core Growth portfolio. MS. MCDONALD noted she has been with Allianz for 30 years and MR. EDELMAN has been working in the industry for 31 years and with Allianz for 13 years. MS. MCDONALD expressed honor in working with MR. BADER. She believes he is the most knowledgeable and kindest person in the industry, and she will miss him.

MR. EDELMAN echoed the comments and expressed appreciation for MR. BADER'S patience as it relates to Allianz' work on behalf of the ARM Board. MR. EDELMAN informed there have been no changes relating to Allianz' investment philosophy and process. He noted the slides illustrate the portfolio compared to both the S&P 500 Index and the Russell 1000 Growth Index. The marketplace has been volatile this year. The portfolio was

up about 5.7% in the third quarter versus the S&P at 3.9% and the Russell 1000 Growth at 4.6%. The focus of the market in Q3 was more on earnings growth fundamentals and less on returns based on bond proxies and income growth.

MR. EDELMAN explained steady acceleration of the U.S. economy has been occurring for a number of years and it is not due to expected growth from the election results and the possibility of new policies and stimulus. Unemployment is 5% or less. Inflation is beginning to come back into the economy after a 30-year decline. Interest rates are beginning to increase. MR. EDELMAN believes there is a shift in the market from bonds to equities, after seven years of the shift from equities to bonds.

MR. EDELMAN described the characteristics of the portfolio. The portfolio currently has 57 companies and the top sector weightings are information technology, consumer discretionary, and healthcare. MR. EDELMAN explained the attribution performance summary for the third quarter. Two healthcare names, Edwards Lifesciences Corp. and Biogen were big contributors to performance. Starbucks was an underperformer.

MR. EDELMAN provided an overview of the oil and gas presentation given by Allianz' PAUL STRAND, who is the Portfolio Manager of the Resources Fund. Global oil demand grew throughout 2016, and is expected to continue to grow, especially in China and India. The view is mid-cycle oil price should be in the \$50 to \$55 price range, and up to \$60 is achievable over the course of 12 months. At the \$60 price-point, an increase in drilling will occur and oil prices will not necessarily be driven higher. The U.S. shale production is positive. MR. EDELMAN noted the portfolio is positioned to reflect the sanguine position on energy.

MR. EDELMAN believes the overall view of post-election, including deregulation, stimulus, corporate and individual income tax rate cuts, will give confidence to consumers and business leaders to reinvest in their companies. There is the potential of repatriation of hundreds of billions of dollars of cash that is outside of the U.S. at much lower rates. The financial sector is expected to benefit from higher interest rates and growth in the economy. MR. EDELMAN noted the big sell-off in healthcare and stated President-Elect Trump's comments on bringing healthcare prices down does not help the industry. It is unknown what is going to happen and MR. EDELMAN does not want to be there when it happens.

MR. ERLENDSON requested the outlook on global trade, in light of the political environment regarding nationalization and closing borders. MR. EDELMAN believes the new Administration is focused more on creating jobs in the U.S. He noted the inequalities of labor costs provide important value-added opportunities in a global environment. MR. EDELMAN thinks it would not be productive for the new Administration to raise tariffs, raise borders, or put up barriers against global trade. He does not believe that will occur and we will all soon find out.

10. FIDELITY INSTITUTIONAL ASSET MANAGEMENT

CHAIR SCHUBERT introduced KRISTIN SHOFNER, Relationship Manager, and BEAU BOASH, Fixed Income Institutional Portfolio Manager, of Fidelity Institutional Asset Management, who provided a presentation on the Fidelity Tactical Bond strategy. MS. SHOFNER noted Fidelity Institutional Asset Management, formerly known as Pyramis Global Advisors, is still owned by Fidelity Investments, and the name change is purely clerical.

MR. COASH described the Tactical Bond strategy format includes the ability to hold up to 70% below investment grade components. The since-inception average has been about 42% below investment grade components, which is slightly more than a core-plus fund. Another ability of the format is to be able to zero-out certain sectors that have no value, while keeping the volatility close to that of the Barclays Aggregate. The portfolio has not had any mortgage-backed securities in three years. Another ability of the format is to be able to take about 10% currency risk. This is not used much because of the high volatility currency adds.

MR. COASH informed Fidelity has 211 fixed income professionals who provide the engine behind this strategy. They are trying to find the best securities that have positive momentum, positive attributes and favor bondholders. As of October 31, 2016, returns have been very strong at 11.56%, compared to the Barclays Aggregate Index at 5%. Year-to-date, returns are at 7.5%, compared to the Barclays Aggregate at 2.5%.

MR. COASH gave a review of how the strategy suffered during the energy crisis, but was able to take advantage of the low energy prices by holding on, not selling at the bottom, and buying names like Pemex and Williams Pipeline at weak prices. MR. COASH stated since the election, the best performing sector has been high yield, up 1.75%. Emerging markets are down 4%, and prices have been coming down for long Treasuries and long corporates. High yield includes BB, B, or CCC. The portfolio has mostly B, BB, and BBB, and has very little CCC exposure. MR. COASH informed the portfolio's Treasury allocation is made up of about 20% in TIPS, which provides a hedge against inflation and against Treasury widening.

VICE-CHAIR JOHNSON requested an explanation of the NR/Other allocation in the portfolio of almost 11%. MR. COASH informed each of the securities in the portfolio has been rated by one of the analysts, and all of the internal ratings in the NR/Other allocation are BB or BBB. He will forward the list of the specific securities to Board members.

MR. ERLENDSON commented the portfolio currently has a zero allocation to emerging markets and the strategy calls for continuing to be opportunistic in the emerging market sector. He requested a description of what opportunity would look like. MR. ERLENDSON also requested comments on local currency versus dollar-denominated instruments.

MR. COASH responded most of the emerging market is driven by the CCC part of the emerging market, with the great returns coming from Argentina, Venezuela, and Russia, and are not appropriate for the strategy because they provide too much risk. MR. COASH informed the strategy has positions in Pemex and Petrobras which are in the government-related sector. Pemex is dollar-based and the position was increased when the dollar prices

weakened post-election. The currency issues will have to settle down before opportunities will occur in developed emerging markets.

MR. COASH expressed excitement about the portfolio positioning going forward and believes the cycle has extended another year. He does not believe rates will rise dramatically over the year and that they are already priced into the market. Duration is one of the largest factor shorts in fixed income. The shorts are beginning to be covered.

12. INVESTMENT ACTIONS

A. Manager Search - Small Cap Growth

MR. BADER informed the portable alpha program is up to about \$400 million worth of investment contracted with three small cap core managers, three small cap value managers, and one small cap growth manager. Manager balance is important in a portable alpha portfolio. Staff is asking the Board to engage Callan to do a search for a small cap growth manager with an expected initial investment of up to \$100 million.

MR. BRICE moved to engage Callan to do a search for a small cap growth manager with an expected initial investment of up to \$100 million. MRS. HARBO seconded the motion.

A roll call was taken, and the motion passed unanimously.

UNFINISHED BUSINESS

1. Calendar

MS. HALL stated there have been no changes to the 2017 calendar placed in Trustee packets.

COMMISSIONER FISHER asked if the ARMB meeting dates and the Permanent Fund Committee (APFC) meeting dates were coordinated and requested a gap between the meetings due to the difficulty of being out of the office for four days when the meetings are during the same week. MS. HALL noted MS. SWANSON at the APFC informed the December 2017 meeting was moved because of a direct conflict and the new meeting date is during the same week as the ARMB meeting. MS. HALL does not know if other meetings fall within the same week and will find out.

2. Disclosure Reports

None

3. Legal Report

MR. GOERING advised the U.S. portion of the Petrobras securities fraud litigation has been settled. The settlement amount is expected to be deposited back into accounts tomorrow. The exact terms of the favorable settlement remain confidential, but are significantly above the

settlement authority that was discussed at the last meeting. MR. GOERING informed he can discuss directly with Trustees if they would like additional information or the Board can enter into executive session to discuss the confidential matters.

MR. GOERING reported claims against Volkswagen and Porsche in Germany related to the securities fraud involving the emissions scandal are still being pursued. He noted T.Rowe Price, on behalf of the Alaska Common Trust Funds, has diligently filed a claim against Volkswagen and Porsche. The ARMB amended its claims, so not to duplicate claims. It is helpful to know managers are aware of issues like this and are pursuing them in appropriate situations.

ACTION ITEMS - NEW BUSINESS

None

COMMISSIONER FISHER informed the Board the Division of Retirement and Benefits has decided to reinstate the Director position. AJAY DESAI has been selected as the new Director after a nationwide search and thorough interview process. MR. DESAI will begin after the first of the year, and has very strong skills in the areas of IT and process, redesign and re-engineering. The organization will largely remain intact. The Chief Operating Officer will be leaving. The Chief Financial Officer, Chief Pension Officer, and Chief Medical Officer will all report to the new Director.

COMMISSIONER HOFFBECK commented he will not be in attendance at tomorrow's meeting. He informed the transition planning with the CIO will begin as soon as possible and the Board will be kept fully apprised.

CHAIR SCHUBERT added she will not be in attendance at tomorrow's meeting. VICE-CHAIR JOHNSON will preside at 9:00 a.m.

RECESS FOR THE DAY

CHAIR SCHUBERT recessed the meeting at 2:32 p.m.

Friday, December 9, 2016

CALL BACK TO ORDER

VICE-CHAIR JOHNSON reconvened the meeting at 9:00 a.m.

Trustees Brice, Erchinger, Fisher, Harbo, West, and Williams were also present.

13. NONE

None

14. T.ROWE PRICE - Small Cap Equity Portfolio

MR. BADER informed T.Rowe Price began working with the pension funds at least 20 years ago when there were extreme difficulties with the SBS Plan. T.Rowe Price was part of the solution and established a methodology called the building block process, which resulted in target date funds that are very much index-aware with very low investment management fees.

MR. BADER introduced JOHN PLOWRIGHT, Institutional Client Service, of T.Rowe Price. MR. PLOWRIGHT noted the Board has previously met the two lead portfolio managers from the Balanced and Retirement Date Series, and two managers from the Stable Value Fund. The mandate being reviewed today is the U.S. Small Cap Stock Trust. MR. PLOWRIGHT introduced FRANK ALONSO, Portfolio Manager, who started as an analyst with T.Rowe Price in 2000. MR. ALONSO was a member of the Investment Advisory Committee of the strategy since 2003 and joined as an Associate Portfolio Manager on this strategy in 2013. The long-term Portfolio Manager of this strategy, GREG MCCRICKARD, retired earlier this year, and MR. ALONSO took over the portfolio as Portfolio Manager. MR. PLOWRIGHT introduced MICHELE WARD, Portfolio Specialist, who joined T.Rowe Price two years ago from Hewitt.

MR. PLOWRIGHT commented T.Rowe Price continues to invest in their investment professionals, continues to grow assets, and continues to be a healthy, independent organization with a strong balance sheet.

MS. WARD reported the total assets of the U.S. Small Cap Core are \$14.6 billion. The assets have been very stable and the fund is closed to new investments. Existing investors are able to contribute assets. The ARMB began this portfolio 15 years ago. MS. WARD noted the Associate Portfolio Manager is CURT ORGANT, who was hired by MR. MCCRICKARD in 1992. MR. ALONSO and MR. ORGANT are joined in the Separate Buyer Investment Advisory Committee, which is a group of senior portfolio managers and analysts acting as a sounding board and ensuring there are no blind spots. The equity research platform includes 54 different analysts with a rated stock in the portfolio. MS. WARD believes this team approach is important to the efforts of the strategy.

MR. ALONSO described the contrarian investment philosophy of the fund that will continue to be employed in managing the strategy. On the growth side of the situation, the intent is to find companies that look expensive on the surface, but are actually cheap when looking out at the potential three or four years in the future. On the traditional value situation, the intent is to find a company that is dislocated from the market because of current problems and the long-term approach provides alpha. MR. ALONSO informed the historical annual portfolio turnover is within 20% to 25% range, equaling a four to five-year holding period. He expects an uptick in turnover over the next six months to cull out a handful of older names and bring in freshness. Approximately 20 takeovers at premiums have occurred this year in the fund, which adds to the turnover percentage.

MR. ERLENDSON asked MR. ALONSO to outline how he differs from his predecessor in terms of views on investment opportunity and portfolio composition. MR. ALONSO believes MR. MCCRICKARD was more value-oriented on the margins and he is more growth-oriented. MR. ALONSO does not foresee a big deviation in investment strategy and noted they both are neutral on sectors, focus on bottoms-up stock picking, run a well-diversified portfolio, and are inclusive with the team's ideas.

MR. ALONSO reported the year-to-date performance has lagged the benchmark. It has been a very strong up market and this strategy is expected to provide better downside capture. The portfolio's returns on a three-year, five-year, and 10-year basis are stronger and well ahead of the benchmark. The sector laggards were financials, materials, and consumer. The contributing sectors were industrials and energy. Individual stock selection creates alpha and drives returns.

MR. ALONSO described the portfolio composition and noted both the earnings growth rate and the price-to-earnings ratio are higher than the benchmark. The portfolio's investment-weighted median market cap is about \$2.5 billion versus \$1.8 billion in the benchmark. The portfolio tends to have a structural overweight in quality, durable industrials. There is a current underweight in healthcare and real estate because valuations have not been attractive.

MR. WILLIAMS asked what differentiates their research team from other companies. MR. ALONSO believes the approach of building on cumulative knowledge is important to the goal of working together and wanting the next person to do a better job than the person before them. MS. WARD added the perspective the analysts are asked to take is different than other teams. The analysts are asked look at the company's long-term strategy, out three, five, 10, and 20 years. The goal is to leverage the long-term perspective into insights the market does not have or is not willing to be patient to evolve.

MR. BRICE requested discussion regarding the strategy currently being utilized, the economic opportunities, and the outlook on this recent run in the markets. MR. ALONSO stated the Russell 2000 Value is the most expensive it has ever been at 40% above its long-term median. He believes the small cap outperformance is toward the latter innings of the cycle, but does not know what the determinant will be to make the run stop. MR. ALONSO noted the structure of the U.S. equity market has changed dramatically, with the decrease in the number of public companies by 50% in the last 30 years. This is driven by larger

companies acquiring smaller companies in order to drive growth in the no-growth global environment. Companies are choosing to stay private because of the cost of public compliance and the abundance of cheap private capital.

15. MCKINLEY CAPITAL MANAGEMENT - Non-US Equity

MR. BADER informed McKinley Capital is an Alaskan firm with a longstanding relationship with the ARM Board. The mandate discussed today is the Non-US Growth fund, with assets totalling approximately \$500 million. ALEX SLIVKA, Director of Institutional Marketing, introduced ROB A. GILLAM, Chief Investment Officer, who has been with the firm since 1994. MR. SLIVKA expressed appreciation to MR. BADER for his decades of service to the State.

MR. SLIVKA began the presentation by providing an overview of the company. McKinley Capital concentrates only on growth equity investing. The organizational chart and investment philosophy has remained the same since the last presentation to the Board. The firm is stable and the people are stable. MR. SLIVKA reviewed the Scientific Advisory Board implemented in 2012. They work closely with management to remain at the forefront of the investment world. MR. SLIVKA informed McKinley Capital has prospered, even through very volatile times, and has been newly hired around the world for global, non-U.S., and emerging market mandates.

MR. GILLAM stated the investment philosophies have not changed since 1990. He believes the markets discount some form of corporate growth, which determines the value of a stock. Bottom-up stock selection with a momentum bias is utilized. MR. GILLAM explained the process includes a systematic search of global companies to harvest the premium available. He informed the global reach is changing. There were many places that historically were off limits to foreign investors, meaning anyone outside of that country, and are now becoming possible to access. The Shenzhen Market in China is available now through Hong Kong Shenzhen Connect.

MR. GILLAM reported the year-to-date performance through September 30th, 2016 was 4% gross, trailing the benchmark by 250 basis points. The one-year performance also reflects the relative drag. Since that time, the market volatility has allowed the year-to-date performance to make up 350 basis points and is now ahead of the benchmark. Compared to the benchmark, the diversified portfolio is comprised of 25% more growth companies that are higher quality, smaller cap, and are selling at a discount.

MR. ERLENDSON requested discussion regarding value and growth styles outside of the U.S. MR. GILLAM noted the MSCI has changed their definition of growth and value. They are not mutually exclusive. A company can be both growth and value in MSCI's view. McKinley Capital focuses on companies with the fastest forward relative growth, high acceleration, and do not consider historical growth or absolute growth.

MR. GILLAM explained the importance of controlling relative risk within the portfolio compared to the benchmark. The typical annual turnover averages about 80%. This year, it is

running higher than that, and last year, it was behind that. This has been an unusual year with a high degree of volatility of factors, sectors, countries, and currencies. MR. GILLAM discussed the volatility is somewhat cancelling each other out, in terms of volatility of the portfolio. The portfolio is running a standard deviation that is about 10% less than the benchmark. He believes factor volatility will decrease in 2017.

MS. ERCHINGER asked how many Alaskan staff McKinley Capital employs. MR. GILLAM stated about a third of the employees are Alaskan. The firm likes to draw from the program in Fairbanks and the program sponsored by McKinley Capital at Alaska Pacific University. MS. ERCHINGER commented drawing from Alaskans strengthens the programs and is good for Alaska.

VICE-CHAIR JOHNSON asked what happens to the leadership at McKinley if ROB B. GILLAM is appointed to a Cabinet position. MR. GILLAM noted the disclosure was made to staff and Callan his father "was asked to come back and have a chat." MR. GILLAM has been in charge of the investment team since 2003 and CIO since 2008, so if his father left for any reason, the control would remain within the firm and McKinley Capital would not change.

16. LAZARD ASSET MANAGEMENT - Emerging Market Equity

MR. BADER informed Lazard has been doing business with the pension funds since before the ASPIB. Over time, a number of mandates have been added. MR. BADER introduced Marketing Representative TONY DOTE and Portfolio Manager/Analyst JAMES DONALD, who gave the presentation on the Emerging Market Equity mandate. MR. DOTE expressed appreciation to MR. BADER for being a great partner, a great client, and friend, and noted his leadership, integrity, and objectivity will be missed. MR. DOTE and the Lazard Family wished MR. BADER all the best in the future.

MR. DOTE reported on the current market uncertainty, particularly in emerging markets. The strategy has been in place for over 20 years and focuses on relative value in choosing individual stocks. There are \$34 billion in assets in the strategy and \$13 billion in the institutional mutual fund in which the ARMB is invested. The fund was closed six years ago to new investors, but has reopened because of last year's unfortunate performance, and will remain open to take in approximately \$3 billion, at which point the strategy will reclose.

MR. DOTE explained Lazard has 65 people who work in the emerging countries and specialize in equity, fixed income/debt, and currency. The structure of the operation provides alpha for clients in those markets regarding the decision-making of the portfolio. The current sector overweights are energy, materials, information technology, and financials. The biggest impact in the underperformance in 2015 and 2016 has been from countries. Being overweight in Brazil in 2015 was a detractor to performance and has bounced back strongly in 2016. The Brazilian currency appreciation was one of the causes for outperformance in 2016. There is also an overweight in Russia and Indonesia.

MR. DOTE reported the year-to-date net performance through September was 24% compared to the index at 16%. In 2015, the portfolio underperformed by 5% and is now showing a V-shaped recovery. MR. DOTE advised the approach did not change, the team did not change, and the underlying portfolio is roughly the same. The style was out of favor in 2015 and is back in favor, driven by fundamentals and stock selection. The portfolio has outperformed over five years and longer. The portfolio is at 21.2% year-to-date, as of December 8, 2016, and the index is at 13.1%.

MR. BADER emphasized the importance of recognizing the cyclical nature in the markets and being patient with managers when they are out of favor, giving them the time to recapture. MR. BADER believes the ARMB portfolio is stronger because it does not panic when underperformance occurs.

MR. DONALD gave a macro view of the global markets in 2015 and 2016. Stock selection has been very positive this year and has been helpful with performance. The particularly additive stocks are Sberbank in Russia, Taiwan Semiconductor Manufacturing Company, and Telekom Indonesia.

VICE-CHAIR JOHNSON requested more information on how the absence of the rule of law in places like Russia is factored in to a major stock selection. MR. DONALD explained the investment process, which includes reviewing the financial statement analysis for each company and looking for distortions. If the accounts are too distorted to be understood, the company is removed from analysis. MR. DONALD noted 20 years ago, there were very few stocks in Russia that could get past the financial statements. Today, most of the accounting is completed under international accounting standards. After the financial analysis is completed, then a fundamental analysis occurs. The final step is the consideration of potential risks to the company, including governance, political and macroeconomic factors. All of the factors are discounted and priced in to the stock.

MR. WILLIAMS asked if Lazard's analysis contains any sense of a moral compass relating to stocks and their selection. MR. DONALD believes that being able to discount 40% of the risks related to governance is adhering to an issue of a moral compass. MR. DONALD gave the specific example of a stock sold this year call CP All in Thailand, that made an acquisition two years ago of Siam Macro. It was determined that an investigation was occurring by the SEC of Thailand and earlier this year, four executive directors were indicted and fined for insider trading. Lazard talked with the company, who did not believe the fines were just and did not make any changes in executive management. Lazard's governance score on the company was adjusted and led to the sale of the stock.

MR. BRICE inquired about current opportunity for this strategy. MR. DONALD believes if the market returns to a value-oriented market, the opportunities are stocks with lower price earnings, higher return on equity, high dividend yield, and lower price-to-cash-flow.

MR. ERLENDSON noted the ARMB is a dollar-denominated investor. He requested a discussion about currency issues as they relate to Lazard's analysis, including the stock's local currency debt or dollar-denominated debt. MR. DONALD explained emerging markets has

gone through an extraordinary period of currency weakness, creating a full negative effect. The flexible structure of the exchange rates and the bear market in commodity prices has caused tremendous underperformance in emerging markets. Lazard's analysis includes a central case for currency prices for the next one, two, and three years that is utilized in forecasting the levels of profitability for each stock. The stocks get analyzed individually and discounted differently.

MR. DONALD continued the presentation by reviewing the portfolio positioning and noted the low turnover in 2015. New attractive opportunities have arisen in 2016 in the more economy-sensitive areas of emerging markets. MR. DONALD believes the biggest risk of a Trump presidency is creating a very active and aggressive trade protectionism policy. If infrastructure spending strengthens the world economy, that would be positive for emerging markets. There was a 15-year period where the profitability of emerging markets was higher than the profitability of developed markets, and today, they are about the same.

MR. DONALD suggested the enemy of this asset class is negative real growth, recession, and crisis, in which emerging markets will probably underperform. In an environment where there is stable and modest global growth, emerging markets are expected to outperform.

MR. ERLENDSON questioned whether the ARMB portfolio holdings would be the same or different in each of the mentioned environments. MR. DONALD noted the only difference would be in forecasting different levels for important variables. For instance, if analysts believed a powerful rebound in commodity prices were to occur, this would change the relative attractiveness of certain stocks in the sector. The main goals would stay the same, creating a less expensive portfolio than the index, with a much higher than typical profitability, from companies who are efficiently managed.

MS. ERCHINGER suggested a good book to read entitled "Red Notice" by Bill Browder, which is based on his life experiences in Russia. MS. ERCHINGER believes it is pertinent to the discussion of the moral compass utilized in stock selection.

OTHER MATTERS TO PROPERLY COME BEFORE THE BOARD

None

PUBLIC/MEMBER COMMENTS

None

INVESTMENT ADVISORY COUNCIL COMMENTS

DR. JENNINGS commented ARMB is a particularly important client to McKinley Capital because of ARMB's portfolio size compared to McKinley Capital's total assets under management. DR. JENNINGS believes this metric bears watching. His nonscientific threshold is participating in no more than 15% of a particular fund or manager's assets. It is good news McKinley Capital is adding new clients.

DR. JENNINGS shared testimonials to MR. BADER from advisory colleagues, including GEORGE WILSON, BOB SHAW, and MICHAEL O'LEARY, who are sending congratulations and appreciations, such as, "Without question, Gary has done a wonderful job in a challenging environment." DR. JENNINGS expressed his pleasure in working with MR. BADER and wishes him all the best in future endeavors.

TRUSTEE COMMENTS

VICE-CHAIR JOHNSON wished MR. BADER well and expressed he will miss him.

MS. ERCHINGER welcomed DEPUTY COMMISSIONER COLGAN and wished him luck in his job. She expressed appreciation to JIM PUCKETT and JOHN BOUCHER for their faithful service on the Board and to the State of Alaska. MS. ERCHINGER regarded DR. JENNINGS' comments regarding McKinley Capital. She believes Alaska is in for a rough ride in the future and believes it is important to support Alaskan firms to an appropriate extent. MS. ERCHINGER expressed appreciation to MR. BADER for being a brilliant mind, a mentor in the field of government finance in Alaska, and an exceptional human being.

FUTURE AGENDA ITEMS

VICE-CHAIR JOHNSON stated that sidebar discussions have occurred regarding a possible presentation about cyber security.

ADJOURNMENT

There being no objection and no further business to come before the Board, the meeting was adjourned at 10:51 a.m. on December 9, 2016, on a motion made by MS. ERCHINGER and seconded by MR. WEST.

Chair of the Board of Trustees
Alaska Retirement Management Board
ATTEST:

Corporate Secretary

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Retirement System Membership Activity
as of December 31, 2016

ACTION: _____

DATE: March 2, 2017

INFORMATION: **X**

BACKGROUND:

Information related to PERS, TRS, JRS, NGNMRS, SBS, and DCP membership activity as requested by the Board.

STATUS:

Membership information as of December 31, 2016.

MEMBERSHIP STATISTICS AS OF SEPTEMBER 30, 2016

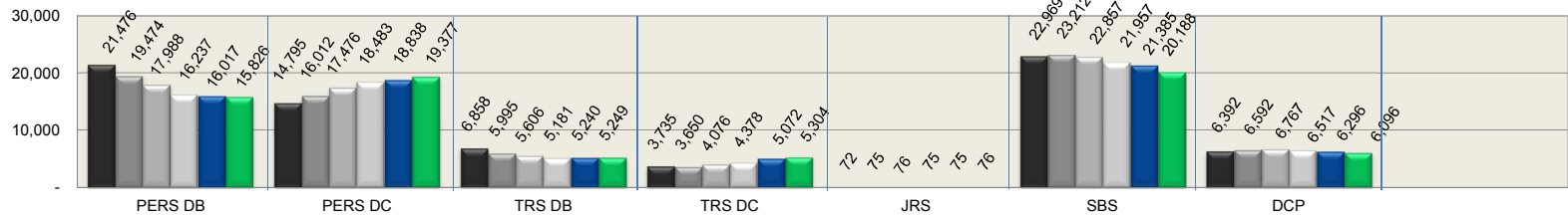
	PERS						TRS					JRS	NGNMRS	SBS	DCP
	DB				DC	SYSTEM	DB			DC	SYSTEM				
	Tier I	Tier II	Tier III	Total	Tier IV	TOTAL	Tier I	Tier II	Total	Tier III	TOTAL				
Active Members	1,728	4,308	9,981	16,017	18,838	34,855	544	4,696	5,240	5,072	10,312	75	n/a	21,385	6,296
Terminated Members															
Entitled to Future Benefits	531	2,396	2,997	5,924	684	6,608	56	700	756	383	1,139	3	n/a	22,096	4,741
Other Terminated Members	1,212	2,311	8,179	11,702	9,695	21,397	304	1,746	2,050	1,854	3,904	-	n/a	-	-
Total Terminated Members	1,743	4,707	11,176	17,626	10,379	28,005	360	2,446	2,806	2,237	5,043	3	n/a	22,096	4,741
Retirees & Beneficiaries	23,819	6,818	2,932	33,569	11	33,580	10,696	2,035	12,731	2	12,731	111	687	n/a	n/a
Managed Accounts	n/a	n/a	n/a	n/a	5,646	5,646	n/a	n/a	n/a	1,558	1,558	n/a	n/a	1,174	1,313
Retirements - 1st QTR FY17	168	155	119	442	-	442	126	205	331	2	331	1	17	n/a	n/a
Full Disbursements - 1st QTR FY17	16	27	106	149	523	672	12	37	49	103	152	-	n/a	588	151
Partial Disbursements - 1st QTR FY17	n/a	n/a	n/a	n/a	70	70	n/a	n/a	n/a	18	18	n/a	n/a	1,099	838

MEMBERSHIP STATISTICS AS OF DECEMBER 31, 2016

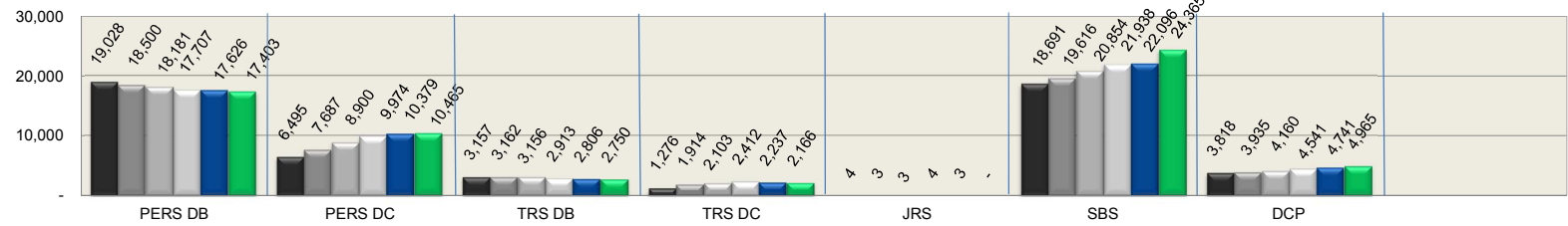
	PERS						TRS					JRS	NGNMRS	SBS	DCP		
	DB				DC	SYSTEM	DB			DC	SYSTEM						
	Tier I	Tier II	Tier III	Total	Tier IV		TOTAL	Tier I	Tier II	Total						Tier III	TOTAL
Active Members	1,686	4,240	9,900	15,826	19,377	35,203	545	4,704	5,249	5,304	10,553	76	n/a	20,188	6,096		
Terminated Members																	
Entitled to Future Benefits	495	2,355	2,985	5,835	691	6,526	53	681	734	360	1,094	3	n/a	24,365	4,965		
Other Terminated Members	1,186	2,281	8,101	11,568	9,774	21,342	299	1,717	2,016	1,806	3,822	-	n/a	-	-		
Total Terminated Members	1,681	4,636	11,086	17,403	10,465	27,868	352	2,398	2,750	2,166	4,916		n/a	24,365	4,965		
Retirees & Beneficiaries	23,788	6,919	3,026	33,733	11	33,744	10,673	2,057	12,730	2	12,730	112	689	n/a	n/a		
Managed Accounts	n/a	n/a	n/a	n/a	5,606	5,606	n/a	n/a	n/a	1,550	1,550	n/a	n/a	1,181	1,322		
Retirements - 2nd QTR FY17	96	130	98	324	-	324	6	23	29	-	29	1	12	n/a	n/a		
Full Disbursements - 2nd QTR FY17	36	37	118	191	422	613	18	26	44	69	113	-	n/a	542	151		
Partial Disbursements - 2nd QTR FY17	n/a	n/a	n/a	n/a	64	64	n/a	n/a	n/a	11	11	n/a	n/a	954	562		

Alaska Division of Retirement and Benefits
FY 2017 QUARTERLY REPORT OF MEMBERSHIP STATISTICS
 Annual & Quarterly Trends as of December 31, 2016

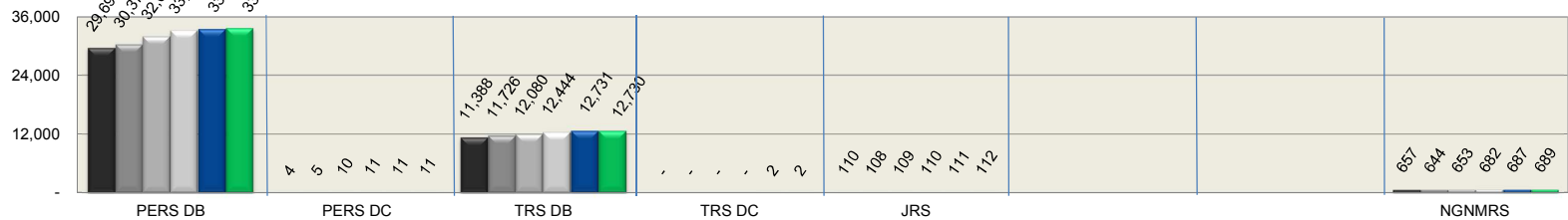
Active Members



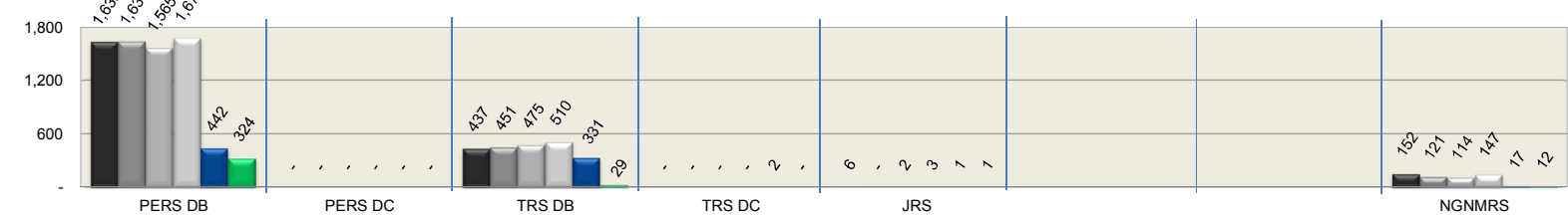
Terminated Members



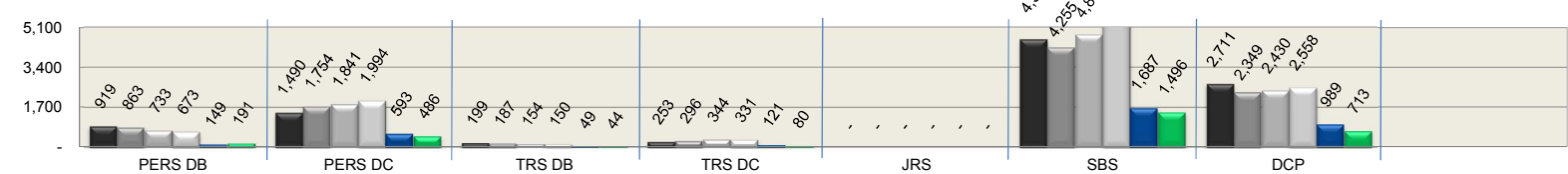
Retirees & Beneficiaries



Retirements



Disbursements



■ FY2013 ■ FY2014 ■ FY2015 ■ FY2016 ■ FY2017 1st Qtr ■ FY2017 2nd Qtr

LEGEND

- Active Members** - All active members at the time of the data pull, except SBS & DCP, which are counts of contributors during the final quarter of each period.
- Terminated Members** - All members who have terminated without refunding their account, except SBS & DCP, which are counts of members with balances at the end of the period less active members.
- Retirees & Beneficiaries** - All members who have retired from the plans, including beneficiaries eligible for benefits.
- Managed Accounts** - Individuals who have elected to participate in the managed accounts option with Great West.
- Retirements** - The number of retirement applications processed.
- Full Disbursements** - All types of disbursements that leave the member balance at zero.
- Partial Disbursements** - All types of disbursements that leave the member balance above zero. If more than one partial disbursement is completed during the quarter for a member, they are counted only once for statistical purposes.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Summary of Monthly Billings -
Conduent Human Resource Services

DATE: March 2, 2017

ACTION: _____

INFORMATION: **X**

BACKGROUND:

AS 37.10.220(a)(8) prescribes that the Alaska Retirement Management Board (Board) “coordinate with the retirement system administrator to have an annual actuarial valuation of each retirement system prepared to determine system assets, accrued liabilities, and funding ratios....”

As part of the oversight process, the Board has requested that the Division of Retirement & Benefits provide quarterly summary updates to review billings and services provided for actuarial valuations and other systems’ request.

STATUS:

Attached are the summary totals for the six months ended December 31, 2016.

Note: Beginning January 1, 2017, Buck Consultants’ name changed to Conduent Human Resource Services.

Conduent Human Resource Services
Billing Summary
For the Three Months Ended September 30, 2016

	<u>PERS</u>	<u>TRS</u>	<u>JRS</u>	<u>NGNMRS</u>	<u>EPORS</u>	<u>AHF</u>	<u>RHF</u>	<u>SBS</u>	<u>DCP</u>	<u>TOTAL</u>
Actuarial valuations	\$ 25,531	24,940	7,172	175	2,593	-	6,757	-	-	\$ 67,168
ARMB presentations and meeting attendance	7,607	3,026	32	166	-	-	-	-	-	10,831
GASB 68 work for PERS and TRS	3,408	1,509	-	-	-	-	-	-	-	4,917
GASB 67 valuation reports as of 6/30/16 (PERS/TRS/JRS/NGNMRS)	3,774	1,687	35	194	-	-	-	-	-	5,690
Retiree medical data review	36,092	13,505	115	-	-	-	145	-	-	49,857
Misc emails and phone calls	532	242	1	-	-	-	2	-	-	777
TOTAL	\$ 76,944	44,909	7,355	535	2,593	-	6,904	-	-	\$ 139,240
For the Three Months Ended September 30, 2015	\$ 208,659	128,615	15,058	12,377	280	-	-	-	-	\$ 364,989

For the Three Months Ended December 31, 2016

	<u>PERS</u>	<u>TRS</u>	<u>JRS</u>	<u>NGNMRS</u>	<u>EPORS</u>	<u>AHF</u>	<u>RHF</u>	<u>SBS</u>	<u>DCP</u>	<u>TOTAL</u>
Actuarial Valuations	\$ 82,934	46,885	11,508	1,843	3,784	-	-	-	-	\$ 146,954
ARMB presentations and meeting attendance	1,948	716	14	3	-	-	-	-	-	2,681
GASB 68 work for PERS and TRS	20,189	8,937	-	-	-	-	-	-	-	29,126
GASB 67 valuation reports as of 6/30/16 (PERS/TRS/JRS/NGNMRS)	10,378	4,595	-	-	-	-	-	-	-	14,973
Retiree medical data review	13,973	5,228	45	-	-	-	57	-	-	19,303
JRS alternative contribution pattern	-	-	2,220	-	-	-	-	-	-	2,220
NGNMRS conversion factors	-	-	-	1,869	-	-	-	-	-	1,869
KPMG audit out-of-scope investment return assumption review	4,781	2,117	-	-	-	-	-	-	-	6,898
GRS - regular discussions and past audit cleanup	5,409	2,177	31	162	-	-	2	-	-	7,781
Additional valuation data to account for rehires	1,470	603	-	-	-	-	-	-	-	2,073
Misc emails and phone calls	1,096	586	108	41	39	-	-	-	-	1,870
TOTAL	\$ 142,178	71,844	13,926	3,918	3,823	-	59	-	-	\$ 235,748
For the Three Months Ended December 31, 2015	\$ 132,211	63,932	9,418	8,554	-	-	-	-	-	\$ 214,115

Summary through the Six Months Ended December 31, 2016

	<u>PERS</u>	<u>TRS</u>	<u>JRS</u>	<u>NGNMRS</u>	<u>EPORS</u>	<u>AHF</u>	<u>RHF</u>	<u>SBS</u>	<u>DCP</u>	<u>TOTAL</u>
Actuarial Valuations	\$ 108,465	71,825	18,680	2,018	6,377	-	6,757	-	-	\$ 214,122
ARMB presentations and meeting attendance	9,555	3,742	46	169	-	-	-	-	-	13,512
GASB 68 work for PERS and TRS	23,597	10,446	-	-	-	-	-	-	-	34,043
GASB 67 valuation reports as of 6/30/16 (PERS/TRS/JRS/NGNMRS)	14,152	6,282	35	194	-	-	-	-	-	20,663
Retiree medical data review	50,065	18,733	160	-	-	-	202	-	-	69,160
JRS alternative contribution pattern	-	-	2,220	-	-	-	-	-	-	2,220
NGNMRS conversion factors	-	-	-	1,869	-	-	-	-	-	1,869
KPMG audit out-of-scope investment return assumption review	4,781	2,117	-	-	-	-	-	-	-	6,898
GRS - regular discussions and past audit cleanup	5,409	2,177	31	162	-	-	2	-	-	7,781
Additional valuation data to account for rehires	1,470	603	-	-	-	-	-	-	-	2,073
Misc emails and phone calls	1,628	828	109	41	39	-	2	-	-	2,647
TOTAL	\$ 219,122	116,753	21,281	4,453	6,416	-	6,963	-	-	\$ 374,988
Summary through the Six Months Ended December 31, 2015	\$ 340,870	192,547	24,476	20,931	280	-	-	-	-	\$ 579,104

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Fiscal Year 2018 Health Reimbursement
Arrangement amounts for employers

ACTION: _____

DATE: March 2, 2017

INFORMATION: X

BACKGROUND:

AS 39.30.350 “Employer Contribution Fund” states that Teachers’ and Public Employees’ Retiree health reimbursement arrangement plan trust fund is an employer contribution fund. Employee contributions are not permitted.

AS 39.30.360 “Management and Investment of the Fund” states that “The Alaska Retirement Management Board is the fiduciary of the fund and has the same powers and duties under this section in regard to the fund as are provided under AS 37.10.220.”

AS 39.30.370 “Contributions by Employers” states that “For each member of the plan, an employer shall contribute to the teachers’ and public employees’ retiree health reimbursement arrangement plan trust fund an amount equal to three percent of the average annual compensation of all employees of all employers in the Teachers’ Retirement System and Public Employees’ Retirement System.” The Division of Retirement & Benefits calculates the HRA amount annually and reports this to all affected employers for proper payroll reporting each fiscal year.

STATUS:

Attached is the memorandum from the Division of Retirement & Benefits for Fiscal Year 2018’s Health Reimbursement Arrangement employer contribution per pay period. The amounts have been reported to employers.

Also attached is a summary spreadsheet for fiscal years 2008 - 2018.

MEMORANDUM

STATE OF ALASKA DEPARTMENT OF ADMINISTRATION Division of Retirement and Benefits

To: Kevin Worley
Chief Financial Officer

Date: November 18, 2016

From: Christina Maiquis *CM*
Accounting Supervisor

Subject: FY 2018 HRA Employer
Contribution Amounts

Alaska Statute 39.30.370 "Contributions by Employers" relates to the employer contributions required to fund the Health Reimbursement Arrangement (HRA) Plan for Public Employees' Retirement System (PERS) and Teachers' Retirement System (TRS) Defined Contribution Retirement (DCR) Plan members. The statute states in part:

For each member of the plan, an employer shall contribute to the teachers' (TRS) and public employees' (PERS) retiree health reimbursement arrangement plan trust fund an amount equal to three percent of the average annual compensation of all employees of all employers in the teachers' retirement system and public employees' retirement system. The administrator shall maintain a record for each member to account for employer contributions on behalf of that member.

In order to compute the dollar amount required to fund the PERS and TRS HRA Plan, a rate of 3.00% is applied to the average annual compensation of all employees of all employers in PERS and TRS. Contributions to a DCR members HRA account are required each pay period in which the employee is enrolled in the Defined Contribution Retirement (DCR) Plan, regardless of the compensation paid during the calendar year. By definition, the HRA employer contribution is a dollar amount.

The Fiscal Year 2018 HRA employer contribution amounts are shown below:

FY 2018 HRA Amounts

Annual	Quarterly	Monthly	Semi-monthly	Bi-weekly	Weekly	Hourly
\$2,084.16	\$521.04	\$173.68	\$86.84	\$80.16	\$40.08	\$1.34

The attached document shows a comparative of HRA rates since Fiscal Year 2008.

Approved:


Kevin Worley, Chief Financial Officer

11/30/2017
Date

Attachment

Division of Retirement & Benefits
Health Reimbursement Arrangement (HRA)
Employer contribution amounts by fiscal year

<u>Fiscal Year</u>	<u>Annual</u>	<u>Quarterly</u>	<u>Monthly</u>	<u>Semi- monthly</u>	<u>Bi-weekly</u>	<u>Weekly</u>	<u>Hourly</u>
2008	1,531.27	382.82	127.61	63.80	58.89	-	0.98
2009	1,616.81	404.20	134.73	67.37	62.18	-	1.04
2010	1,699.71	424.93	141.64	70.82	65.37	-	1.09
2011	1,720.70	430.17	143.39	71.70	66.18	-	1.10
2012	1,778.09	444.52	148.17	74.09	68.39	-	1.14
2013	1,848.43	462.11	154.04	77.02	71.09	-	1.18
2014	1,896.60	474.15	158.05	79.03	72.95	-	1.22
2015	1,960.53	490.13	163.38	81.69	75.41	37.70	1.26
2016	2,004.52	501.13	167.04	83.52	77.10	38.55	1.28
2017	2,049.36	512.34	170.78	85.39	78.82	39.41	1.31
2018	2,084.16	521.04	173.68	86.84	80.16	40.08	1.34

NOTE: For fiscal year 2007, HRA amounts were computed by employer rather than the HRA as a plan. Beginning fiscal year 2008, HRA amounts were computed and applied uniformly to all members and are reflected above.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Amending ARMB Delegation of Authority

ACTION: X

DATE: March 2, 2017

INFORMATION:

BACKGROUND:

Alaska Statute 37.10.260 states that the Department of Revenue shall provide investment staff for the Alaska Retirement Management Board (ARMB) and authorizes the ARMB to delegate certain responsibilities to an officer or employee of the Department of Revenue.

Resolution 2014-12 delegates investment authority to the Chief Investment Officer (CIO). This delegation provides the CIO discretion and latitude to act on behalf of the Board. The position of CIO is now vacant following the retirement of Gary Bader on January 31, 2017. Commissioner Hoffbeck has appointed Bob Mitchell to serve as Acting CIO for the Department of Revenue.

STATUS:

Staff recommends that the ARMB delegate responsibilities to the Acting CIO as outlined in the attachments. This delegation is substantially similar to the existing delegation to the CIO.

RECOMMENDATION:

That the Alaska Retirement Management Board adopt resolution 2017-01 delegating certain responsibilities to the Acting Chief Investment Officer.

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
Relating to Delegation of Authority

Resolution ~~2014-12~~2017-01

WHEREAS AS 37.10.210 established the Alaska Retirement Management Board (Board) to provide prudent and productive management and investment of trusts or other State funds; and

WHEREAS the Board shall establish investment policies for the funds for which it is responsible; and

WHEREAS the Board shall select and retain certain external and internal money managers; and

WHEREAS the Board may contract certain services to carry out its powers and duties; and

WHEREAS AS 37.10.260(a) establishes that the Department of Revenue shall provide staff for the Board; and

WHEREAS AS 37.10.260(b) authorizes the Board of Trustees to be responsible for designating a trustee or an officer or an employee of the Department of Revenue to sign on behalf of the Board any deed, contract, or other document that must be executed by or on behalf of the Board;

NOW THEREFORE BE IT RESOLVED BY THE ALASKA RETIREMENT MANAGEMENT BOARD, as follows: (1) To expedite business between meetings, either the Chairman or the Secretary of the Board is authorized to sign all deeds, contracts or other documents. All documents so signed shall be effective immediately but shall be presented to the Board at the succeeding meeting for Board information. (2) The Board will delegate to the Acting Chief Investment Officer, or his designee, certain powers noted in the attachment entitled "Delegation Investment Authority." (3) This resolution repeals and replaces Resolution ~~2012-18~~2014-12.

DATED at ~~Anchorage~~Juneau, Alaska this _____ day of ~~June~~March, ~~2014~~2017.

Chair

ATTEST:

Secretary

Delegation of Investment Authority

Pursuant to Resolution ~~2014-12~~2017-01, the Acting Chief Investment Officer (Acting CIO) of the Department of Revenue is hereby authorized to commit, bind, and obligate the State of Alaska for transactions for all funds under the Alaska Retirement Management Board's management, consistent with actions and directions from the Board. The Acting CIO is not authorized to significantly alter credit quality or duration parameters of any portfolios without prior approval from the Board or its designee.

The Acting CIO is authorized to open an account or accounts with one or more firms or financial institutions for the purpose of engaging in transactions to purchase, sell, assign, or transfer the assets, or to otherwise enter into agreements, contracts, commitments or similar arrangements, including for cash or forward settlement or futures or options contracts relating to the investment of the above funds.

The Acting CIO is authorized to execute those transactions, and in connection therewith to deliver securities and monies, to sign and deliver agreements, contracts, commitments and confirmations and other necessary, desirable or customary documents. Other parties to the transactions may rely and act upon any verbal or written orders and instructions from him in connection with such accounts and transactions.

The Acting CIO is further authorized to delegate the above responsibilities to other individuals. The Board shall be notified at the next meeting as to which individuals have received such delegation.

With respect to security transactions for all funds, including funds other than fixed income portfolio, the Acting CIO is authorized to adjust asset allocation within Board approved parameters. All asset allocation adjustments, with a complete explanation for the action, must be reported to the Board at the next meeting. The Acting CIO will also be required to submit quarterly reports to the Board discussing market conditions, performance, and portfolio conditions.

The Acting CIO is authorized to contract with current ARMB investment managers in good standing in amounts up to one percent of total ARMB defined benefit assets per single investment. This authority includes investment contracts, limited partnerships, commingled funds and joint venture investment relationships with current investment managers in all asset classes, in a manner consistent with the Board approved Investment Guidelines.

The Acting CIO is authorized to approve investment manager requests to name ARMB in publications or written materials.

In the Acting CIO's absence, responsibilities may be delegated to a senior investment officer, who will assume the Acting CIO's delegated investment authority.

State of Alaska

ALASKA RETIREMENT MANAGEMENT BOARD

Addendum to Delegation of Authority Resolution ~~2014-12~~2017-01

Alaska Retirement Management Board Resolution ~~2014-12~~2017-01 delegates certain responsibilities to the Acting Chief Investment Officer (Acting CIO). The Acting Chief Investment Officer is Bob G. Mitchell and his specimen signature follows.

~~is Gary M. Bader and his specimen signature follows.~~

Chief Investment Officer:

~~Gary M. Bader~~Bob G. Mitchell

Effective the ~~26th~~ ___ day of ~~June~~March, ~~2014~~2017

Gail Schubert, Chair, Alaska Retirement Management Board

State of Alaska
ALASKA RETIREMENT MANAGEMENT BOARD
Relating to Delegation of Authority

Resolution 2017-01

WHEREAS AS 37.10.210 established the Alaska Retirement Management Board (Board) to provide prudent and productive management and investment of trusts or other State funds; and

WHEREAS the Board shall establish investment policies for the funds for which it is responsible; and

WHEREAS the Board shall select and retain certain external and internal money managers; and

WHEREAS the Board may contract certain services to carry out its powers and duties; and

WHEREAS AS 37.10.260(a) establishes that the Department of Revenue shall provide staff for the Board; and

WHEREAS AS 37.10.260(b) authorizes the Board of Trustees to be responsible for designating a trustee or an officer or an employee of the Department of Revenue to sign on behalf of the Board any deed, contract, or other document that must be executed by or on behalf of the Board;

NOW THEREFORE BE IT RESOLVED BY THE ALASKA RETIREMENT MANAGEMENT BOARD, as follows: (1) To expedite business between meetings, either the Chairman or the Secretary of the Board is authorized to sign all deeds, contracts or other documents. All documents so signed shall be effective immediately but shall be presented to the Board at the succeeding meeting for Board information. (2) The Board will delegate to the Acting Chief Investment Officer, or his designee, certain powers noted in the attachment entitled "Delegation Investment Authority." (3) This resolution repeals and replaces Resolution 2014-12.

DATED at Juneau, Alaska this _____ day of March, 2017.

Chair

ATTEST:

Secretary

Delegation of Investment Authority

Pursuant to Resolution 2017-01, the Acting Chief Investment Officer (Acting CIO) of the Department of Revenue is hereby authorized to commit, bind, and obligate the State of Alaska for transactions for all funds under the Alaska Retirement Management Board's management, consistent with actions and directions from the Board. The Acting CIO is not authorized to significantly alter credit quality or duration parameters of any portfolios without prior approval from the Board or its designee.

The Acting CIO is authorized to open an account or accounts with one or more firms or financial institutions for the purpose of engaging in transactions to purchase, sell, assign, or transfer the assets, or to otherwise enter into agreements, contracts, commitments or similar arrangements, including for cash or forward settlement or futures or options contracts relating to the investment of the above funds.

The Acting CIO is authorized to execute those transactions, and in connection therewith to deliver securities and monies, to sign and deliver agreements, contracts, commitments and confirmations and other necessary, desirable or customary documents. Other parties to the transactions may rely and act upon any verbal or written orders and instructions from him in connection with such accounts and transactions.

The Acting CIO is further authorized to delegate the above responsibilities to other individuals. The Board shall be notified at the next meeting as to which individuals have received such delegation.

With respect to security transactions for all funds, including funds other than fixed income portfolio, the Acting CIO is authorized to adjust asset allocation within Board approved parameters. All asset allocation adjustments, with a complete explanation for the action, must be reported to the Board at the next meeting. The Acting CIO will also be required to submit quarterly reports to the Board discussing market conditions, performance, and portfolio conditions.

The Acting CIO is authorized to contract with current ARMB investment managers in good standing in amounts up to one percent of total ARMB defined benefit assets per single investment. This authority includes investment contracts, limited partnerships, commingled funds and joint venture investment relationships with current investment managers in all asset classes, in a manner consistent with the Board approved Investment Guidelines.

The Acting CIO is authorized to approve investment manager requests to name ARMB in publications or written materials.

In the Acting CIO's absence, responsibilities may be delegated to a senior investment officer, who will assume the Acting CIO's delegated investment authority.

State of Alaska

ALASKA RETIREMENT MANAGEMENT BOARD

Addendum to Delegation of Authority Resolution 2017-01

Alaska Retirement Management Board Resolution 2017-01 delegates certain responsibilities to the Acting Chief Investment Officer (Acting CIO). The Acting Chief Investment Officer is Bob G. Mitchell and his specimen signature follows.

Chief Investment Officer:

Bob G. Mitchell

Effective the ____ day of March, 2017

Gail Schubert, Chair, Alaska Retirement Management Board

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: ARMB Review Actuary Procurement

ACTION: _____

DATE: March 2, 2017

INFORMATION: X

BACKGROUND:

Alaska Statute 37.10.220(a)(9) provides that the Alaska Retirement Management Board (the board) shall review actuarial assumptions prepared and certified by a member of the American Academy of Actuaries and conduct experience analyses of the retirement systems not less than once every four years, except for health cost assumptions, which shall be reviewed annually; the results of all actuarial assumptions prepared shall be reviewed and certified by a second member of the American Academy of Actuaries before presentation to the board.

STATUS:

Gabriel, Roeder, Smith & Company (GRS) was awarded the contract as the Review Actuary as of July 1, 2013 to June 30, 2014 following an RFP procurement through the Department of Revenue. The contract terms specified one year with three optional renewals which have now been exercised, and the current contract with GRS ends June 30, 2017.

Pursuant to Res 2016-02 Delegation of Procurement-Related Authority, staff developed an RFP with a timetable to ensure that, as required by statute, a review actuary can be in place by July 1, 2017 to conduct the required reviews of the FY2017 valuations and the scheduled experience analysis conducted by Conduent Human Resource Services.

CHIEF INVESTMENT OFFICER REPORT

March 2-3, 2017

1. Directed the rebalancing of retirement funds on November 23, 2016, and December 1, 2016.
2. Directed the rebalancing of the Alaska National Guard and Naval Militia Retirement Fund on November 21, 2016, December 23, 2016, January 25, 2017, January 30, 2017, February 3, 2017, February 10, 2017 and February 15, 2017.
3. Crestline Blue Glacier Fund – Class C-2: transferred \$3,239,513 from cash to the fund on November 25, 2016; transferred \$26,173,800 from the fund to cash on December 13, 2016; transferred \$16,178,230 from cash to the fund on December 19, 2016; transferred \$9,201,789 from cash into the fund on January 24, 2017.
4. Transferred \$15.64 from Luther King and the small cap transition fund to cash on November 29, 2016 to clean up residual balances remaining from the liquidation of Luther King's mandate.
5. Transferred \$250 million from the BlackRock MSCI ACWI ex-US IMI passive investment to cash on December 1, 2016.
6. Funded the Disciplined Small Cap Core Strategy with BMO Capital Management with \$75 million from cash on December 15, 2016, versus liquidating \$25 million each from McKinley Capital, BHMS and QMA.
7. Transferred \$10.5 million from GAM Glacier Bear Fund to cash on December 29, 2016.
8. Transferred \$25 million from Western Asset Management Company to cash on January 10, 2017.
9. Transferred \$25 million from Guggenheim Partners to cash on January 17, 2017.
10. Directed the reinvestment of \$1,504.84 in litigation proceeds surrounding BNY Mellon's foreign exchange practices into the Parametric Emerging Markets Fund on January 31, 2017.
11. Transferred \$25 million from cash to IFM Global Infrastructure fund on February 15, 2017.
12. As part of the cash equitization program, directed SSgA to roll \$16 million in long Russell 2000 eMini futures contracts and \$16 million in long S&P 500 eMini futures contracts on December 5, 2016, from December 2016 settlement to March 2017 settlement.
13. Portable Alpha
 - a. Directed multiple transfers of cash into or out of the Portable Alpha futures accounts to maintain necessary margin positions. Copies of transactions are available upon request.

- b. Rolled \$380 million in short Russell 2000 eMini futures contracts and \$420 million in long S&P 500 eMini futures contracts on December 7, 2016, from December 2016 settlement to March 2017 settlement.
 - c. Directed SSgA to purchase \$4 million in long S&P 500 eMini futures contracts on December 9, 2016.
 - d. Directed SSgA to purchase \$25 million in long S&P 500 eMini futures contracts on January 4, 2017.
 - e. Invested \$25 million in the internally-managed S&P 600 small cap fund on January 5, 2017.
 - f. On January 20, 2017, rebalanced small cap manager roster by purchasing \$31.5 million exposure to the internally-managed S&P 600 small cap fund and selling \$31.5 million exposure to the SSgA Managed Volatility Russell 2000 fund.
14. Formally notified Cap Guardian of the board's December 8, 2016 decision to remove the firm from the Manager Watch List.
15. Recommend that Allianz/RCM Socially Responsible Investment Fund be placed on the manager watch list due to performance.
16. Executed three documents consenting to the movement of State Street's investment management business from State Street Bank and trust Company to State Street Global Advisors Trust Company. This change was necessary to comply with the Dodd-Frank Act, and is not anticipated to affect the investment services provided.
17. On February 6, 2017, KKR Prisma announced its intention to merge with Pacific Alternative Asset Management (PAAMCO) to form PAAMCO Prisma.
18. On January 10, 2017, KKR announced that the Global Head of Private Credit and co-head of the direct lending strategy, Erik Falk, is leaving the firm.
19. The securities lending program has been restarted, effective February 20, 2017.
20. Kevin Buckland became the newest member of Treasury's team on February 21, 2017.
21. CIO Observations

Rebalancing Trades (Final)	Pension				Health Care		
	PERS	TRS	JRS	Mil	PERS	TRS	JRS
	AY21	AY22	AY23	AY24	AYW2	AYW3	AYW4
Broad Domestic Equity							
Large Cap Pool (AYQK)	(3,465,600)	(2,752,541)	(24,411)	(460,172)	4,018,083	1,721,354	25,509
Small Cap Pool (AYQC)	(597,413)	(484,097)	(3,828)	(92,904)	672,015	308,759	4,780
Alternative Equity Strategies							
Advent Capital Convertible Bond (AY52)	(130,468)	(104,078)	(917)		132,826	61,855	968
Alternative Equity Strategies Pool (AYYK)	(517,233)	(412,612)	(3,636)		526,583	245,220	3,839
Global Equity Ex-US							
International Equity Pool (AYRC)	(3,004,896)	(2,391,311)	(21,449)	82,738	3,004,950	1,401,560	21,988
International Equity - Small Cap Pool (AYRK)	(190,382)	(151,507)	(1,359)	5,242	190,386	88,799	1,393
Emerging Markets Pool (AYSC)	(434,298)	(345,617)	(3,100)	11,958	434,306	202,568	3,178
Private Equity							
Private Equity Pool (AYSK)	(1,200,290)	(957,505)	(8,437)		1,221,988	569,057	8,909
Real Assets							
Real Estate Pool (AYVK)	(1,172,056)	(834,559)	(13,933)		1,185,604	529,710	7,842
JP Morgan Real Estate (AY7A)	30,218	(33,709)	3,491		0	0	0
REIT Holdings (AYPC)	(204,357)	(163,021)	(1,436)		208,051	96,885	1,517
Farmland Pool (AYTK)	(524,942)	(418,761)	(3,690)		534,432	248,875	3,896
Timber Pool (AYUK)	(238,254)	(190,062)	(1,675)		242,561	112,956	1,768
Energy Pool (AYVC)	(50,394)	(40,201)	(354)		51,305	23,892	374
TIPS Internally Managed (AY6N)	(34,825)	(27,781)	(245)		35,454	16,510	259
MLP Pool (AYWK)	(314,284)	(250,714)	(2,209)		319,966	149,002	2,333
Private Infrastructure (AYZK)	(206,244)	(164,527)	(1,450)		209,972	97,780	1,531
Public Infrastructure (AYMK)	(126,508)	(100,919)	(889)		128,795	59,978	939
Absolute Return							
Absolute Return Pool (AYTC)	(1,042,745)	(831,828)	(7,329)		1,061,595	494,365	7,740
Fixed Income							
Taxable Municipal Bond Pool (AYZC)	(157,183)	(125,555)	(1,095)	(2,369)	161,579	75,181	1,176
US Treasury Fixed Income Pool (AY1A)	(777,860)	(603,096)	(6,456)	249,425	628,327	299,263	4,820
Mondrian Inv. Partners Inc (AY63)	(253,607)	(194,675)	(2,216)	109,283	186,515	89,776	1,464
High Yield Pool (AYPK)	(560,364)	(446,518)	(3,967)	7,161	565,797	263,672	4,132
Lazard Emerging Income (AY5M)	(67,298)	(53,756)	(469)	(1,014)	69,180	32,189	503
Tactical Fixed Income Pool (AYIC)	(119,889)	(95,765)	(836)	(1,807)	123,242	57,343	897
Short-term Fixed Income							
State of AK Short Term Pool (AY70)	15,361,173	12,174,715	111,895	92,460	(15,913,511)	(7,246,551)	(111,756)

11/23/2016	DC Medical		DC Health Reimbursement		DC OD&D		
Rebalancing Trades (Final)	PERS	TRS	PERS	TRS	PERS	TRS	P&F
	AYX2	AYX3	AYY2	AYY3	AY6G	AY6H	AY6I
Broad Domestic Equity							
Large Cap Pool (AYQK)	159,662	57,605	517,348	167,268	24,678	2,969	8,247
Small Cap Pool (AYQC)	32,414	12,387	104,587	36,122	4,962	564	1,654
Alternative Equity Strategies							
Advent Capital Convertible Bond (AY52)	6,693	2,573	21,569	7,506	1,020	114	338
Alternative Equity Strategies Pool (AYYK)	26,535	10,199	85,511	29,756	4,043	454	1,340
Global Equity Ex-US							
International Equity Pool (AYRC)	152,406	58,582	491,038	170,916	23,202	2,598	7,679
International Equity - Small Cap Pool (AYRK)	9,656	3,712	31,111	10,829	1,470	165	486
Emerging Markets Pool (AYSC)	22,027	8,467	70,970	24,703	3,353	375	1,110
Private Equity							
Private Equity Pool (AYSK)	61,576	23,669	198,437	69,053	9,382	1,053	3,108
Real Assets							
Real Estate Pool (AYVK)	49,747	19,120	161,426	55,736	7,774	925	2,664
JP Morgan Real Estate (AY7A)	0	0	0	0	0	0	0
REIT Holdings (AYPC)	10,484	4,030	33,785	11,757	1,597	179	529
Farmland Pool (AYTK)	26,930	10,351	86,786	30,200	4,103	460	1,359
Timber Pool (AYUK)	12,223	4,698	39,389	13,707	1,862	209	617
Energy Pool (AYVC)	2,585	994	8,331	2,899	394	44	131
TIPS Internally Managed (AY6N)	1,787	687	5,757	2,003	272	31	90
MLP Pool (AYWK)	16,123	6,197	51,959	18,081	2,457	276	814
Private Infrastructure (AYZK)	10,581	4,067	34,097	11,865	1,612	181	534
Public Infrastructure (AYMK)	6,490	2,495	20,915	7,278	989	111	328
Absolute Return							
Absolute Return Pool (AYTC)	53,494	20,562	172,391	59,989	8,151	914	2,700
Fixed Income							
Taxable Municipal Bond Pool (AYZC)	8,114	3,119	26,151	9,099	1,237	139	410
US Treasury Fixed Income Pool (AY1A)	34,634	13,313	111,283	38,855	5,219	570	1,703
Mondrian Inv. Partners Inc (AY63)	10,701	4,113	34,341	12,007	1,605	173	520
High Yield Pool (AYPK)	28,596	10,992	92,144	32,069	4,355	488	1,442
Lazard Emerging Income (AY5M)	3,474	1,335	11,196	3,896	530	59	176
Tactical Fixed Income Pool (AYIC)	6,189	2,379	19,946	6,940	943	106	313
Short-term Fixed Income							
State of AK Short Term Pool (AY70)	(753,120)	(285,646)	(2,430,467)	(832,532)	(115,211)	(13,157)	(38,292)

	12/1/2016			Pension				Health Care		
Rebalancing Trades (Final)	PERS	TRS	JRS	Mil	PERS	TRS	JRS			
	AY21	AY22	AY23	AY24	AYW2	AYW3	AYW4			
Broad Domestic Equity										
Large Cap Pool (AYQK)	1,388,918	(257,312)	45,455	(8,937)	(908,665)	(522,164)	181			
Small Cap Pool (AYQC)	354,580	(39,042)	8,213	(592)	(272,295)	(121,201)	(115)			
Alternative Equity Strategies										
Advent Capital Convertible Bond (AY52)	74,054	(8,185)	1,716		(56,939)	(25,341)	(24)			
Alternative Equity Strategies Pool (AYYK)	293,924	(32,488)	6,809		(225,993)	(100,581)	(96)			
Global Equity Ex-US										
International Equity Pool (AYRC)	1,520,063	(227,852)	35,635	235,481	(1,302,270)	(574,723)	(803)			
International Equity - Small Cap Pool (AYRK)	101,539	(15,220)	2,380	15,730	(86,991)	(38,391)	(54)			
Emerging Markets Pool (AYSC)	231,272	(34,667)	5,422	35,828	(198,135)	(87,442)	(122)			
Private Equity										
Private Equity Pool (AYSK)	714,898	(79,020)	16,561		(549,673)	(244,639)	(234)			
Real Assets										
Real Estate Pool (AYVK)	1,095,574	389,604	21,774		(1,117,018)	(447,006)	(3,030)			
JP Morgan Real Estate (AY7A)	65,846	(67,798)	1,953		0	0	0			
REIT Holdings (AYPC)	116,047	(12,827)	2,688		(89,227)	(39,711)	(38)			
Farmland Pool (AYTK)	300,512	(33,216)	6,961		(231,059)	(102,836)	(99)			
Timber Pool (AYUK)	135,354	(14,961)	3,136		(104,071)	(46,318)	(44)			
Energy Pool (AYVC)	28,641	(3,166)	663		(22,021)	(9,801)	(9)			
TIPS Internally Managed (AY6N)	19,792	(2,188)	458		(15,217)	(6,773)	(6)			
MLP Pool (AYWK)	178,585	(19,739)	4,137		(137,311)	(61,112)	(59)			
Private Infrastructure (AYZK)	117,217	(12,956)	2,715		(90,126)	(40,112)	(38)			
Public Infrastructure (AYMK)	72,710	(8,037)	1,684		(55,905)	(24,881)	(24)			
Absolute Return										
Absolute Return Pool (AYTC)	604,143	(66,778)	13,995		(464,516)	(206,739)	(198)			
Fixed Income										
Taxable Municipal Bond Pool (AYZC)	90,831	(9,345)	2,099	(2,735)	(68,288)	(30,449)	(26)			
US Treasury Fixed Income Pool (AY1A)	135,624	(183,946)	4,335	664,916	(481,290)	(200,456)	(906)			
Mondrian Inv. Partners Inc (AY63)	120,024	(14,331)	2,788	4,190	(94,661)	(42,043)	(45)			
High Yield Pool (AYPK)	318,966	(34,155)	7,381	(4,334)	(242,790)	(108,146)	(99)			
Lazard Emerging Income (AY5M)	38,763	(3,988)	896	(1,167)	(29,142)	(12,994)	(11)			
Tactical Fixed Income Pool (AYIC)	69,621	(7,163)	1,609	(2,096)	(52,342)	(23,339)	(20)			
Short-term Fixed Income										
State of AK Short Term Pool (AY70)	(8,187,497)	798,777	(201,463)	(936,285)	6,895,946	3,117,199	5,922			

12/1/2016	DC Medical		DC Health Reimbursement		DC OD&D		
Rebalancing Trades (Final)	PERS	TRS	PERS	TRS	PERS	TRS	P&F
	AYX2	AYX3	AYY2	AYY3	AY6G	AY6H	AY6I
Broad Domestic Equity							
Large Cap Pool (AYQK)	60,966	3,349	179,942	8,671	8,219	(70)	1,447
Small Cap Pool (AYQC)	15,546	1,769	45,324	5,208	2,005	(13)	612
Alternative Equity Strategies							
Advent Capital Convertible Bond (AY52)	3,248	370	9,470	1,088	419	(3)	128
Alternative Equity Strategies Pool (AYYK)	12,893	1,467	37,588	4,318	1,663	(11)	507
Global Equity Ex-US							
International Equity Pool (AYRC)	69,696	7,751	202,671	22,833	8,919	(92)	2,692
International Equity - Small Cap Pool (AYRK)	4,656	518	13,538	1,525	596	(6)	180
Emerging Markets Pool (AYSC)	10,604	1,179	30,836	3,474	1,357	(14)	410
Private Equity							
Private Equity Pool (AYSK)	31,360	3,568	91,424	10,503	4,045	(27)	1,234
Real Assets							
Real Estate Pool (AYVK)	16,356	6	42,359	221	1,387	(354)	127
JP Morgan Real Estate (AY7A)	0	0	0	0	0	0	0
REIT Holdings (AYPC)	5,090	579	14,841	1,705	657	(4)	200
Farmland Pool (AYTK)	13,182	1,500	38,431	4,415	1,700	(11)	519
Timber Pool (AYUK)	5,937	676	17,310	1,989	766	(5)	234
Energy Pool (AYVC)	1,256	143	3,663	421	162	(1)	49
TIPS Internally Managed (AY6N)	868	99	2,531	291	112	(1)	34
MLP Pool (AYWK)	7,834	891	22,838	2,624	1,010	(7)	308
Private Infrastructure (AYZK)	5,142	585	14,990	1,722	663	(4)	202
Public Infrastructure (AYMK)	3,189	363	9,298	1,068	411	(3)	125
Absolute Return							
Absolute Return Pool (AYTC)	26,501	3,016	77,260	8,876	3,418	(22)	1,043
Fixed Income							
Taxable Municipal Bond Pool (AYZC)	3,949	452	11,520	1,329	510	(3)	156
US Treasury Fixed Income Pool (AY1A)	14,469	1,138	40,721	3,404	1,668	(105)	428
Mondrian Inv. Partners Inc (AY63)	5,319	602	15,497	1,772	685	(5)	208
High Yield Pool (AYPK)	13,936	1,589	40,638	4,677	1,799	(11)	549
Lazard Emerging Income (AY5M)	1,685	193	4,916	567	218	(1)	67
Tactical Fixed Income Pool (AYIC)	3,027	346	8,830	1,018	391	(2)	120
Short-term Fixed Income							
State of AK Short Term Pool (AY70)	(336,712)	(32,149)	(976,435)	(93,721)	(42,781)	775	(11,577)

Military

11/21/2016	Pension				Health Care		
Rebalancing Trades (Final)	PERS	TRS	JRS	Mil	PERS	TRS	JRS
	AY21	AY22	AY23	AY24	AYW2	AYW3	AYW4
Broad Domestic Equity							
Large Cap Pool (AYQK)	0	0	0	0	0	0	0
Small Cap Pool (AYQC)	0	0	0	0	0	0	0
Alternative Equity Strategies							
Advent Capital Convertible Bond (AY52)	0	0	0		0	0	0
Alternative Equity Strategies Pool (AYYK)	0	0	0		0	0	0
Global Equity Ex-US							
International Equity Pool (AYRC)	0	0	0	0	0	0	0
International Equity - Small Cap Pool (AYRK)	0	0	0	0	0	0	0
Emerging Markets Pool (AYSC)	0	0	0	0	0	0	0
Private Equity							
Private Equity Pool (AYSK)	0	0	0		0	0	0
Real Assets							
Real Estate Pool (AYVK)	0	0	0		0	0	0
JP Morgan Real Estate (AY7A)	0	0	0		0	0	0
REIT Holdings (AYPC)	0	0	0		0	0	0
Farmland Pool (AYTK)	0	0	0		0	0	0
Timber Pool (AYUK)	0	0	0		0	0	0
Energy Pool (AYVC)	0	0	0		0	0	0
TIPS Internally Managed (AY6N)	0	0	0		0	0	0
MLP Pool (AYWK)	0	0	0		0	0	0
Private Infrastructure (AYZK)	0	0	0		0	0	0
Public Infrastructure (AYMK)	0	0	0		0	0	0
Absolute Return							
Absolute Return Pool (AYTC)	0	0	0		0	0	0
Fixed Income							
Taxable Municipal Bond Pool (AYZC)	0	0	0	0	0	0	0
US Treasury Fixed Income Pool (AY1A)	0	0	0	(8,000)	0	0	0
Mondrian Inv. Partners Inc (AY63)	0	0	0	0	0	0	0
High Yield Pool (AYPK)	0	0	0	0	0	0	0
Lazard Emerging Income (AY5M)	0	0	0	0	0	0	0
Tactical Fixed Income Pool (AYIC)	0	0	0	0	0	0	0
Short-term Fixed Income							
State of AK Short Term Pool (AY70)	0	0	0	8,000	0	0	0

11/21/2016	DC Medical		DC Health Reimbursement		DC OD&D			
Rebalancing Trades (Final)	PERS	TRS	PERS	TRS	PERS	TRS	P&F	
	AYX2	AYX3	AYY2	AYY3	AY6G	AY6H	AY6I	
Broad Domestic Equity								
Large Cap Pool (AYQK)	0	0	0	0	0	0	0	
Small Cap Pool (AYQC)	0	0	0	0	0	0	0	
Alternative Equity Strategies								
Advent Capital Convertible Bond (AY52)	0	0	0	0	0	0	0	
Alternative Equity Strategies Pool (AYYK)	0	0	0	0	0	0	0	
Global Equity Ex-US								
International Equity Pool (AYRC)	0	0	0	0	0	0	0	
International Equity - Small Cap Pool (AYRK)	0	0	0	0	0	0	0	
Emerging Markets Pool (AYSC)	0	0	0	0	0	0	0	
Private Equity								
Private Equity Pool (AYSK)	0	0	0	0	0	0	0	
Real Assets								
Real Estate Pool (AYVK)	0	0	0	0	0	0	0	
JP Morgan Real Estate (AY7A)	0	0	0	0	0	0	0	
REIT Holdings (AYPC)	0	0	0	0	0	0	0	
Farmland Pool (AYTK)	0	0	0	0	0	0	0	
Timber Pool (AYUK)	0	0	0	0	0	0	0	
Energy Pool (AYVC)	0	0	0	0	0	0	0	
TIPS Internally Managed (AY6N)	0	0	0	0	0	0	0	
MLP Pool (AYWK)	0	0	0	0	0	0	0	
Private Infrastructure (AYZK)	0	0	0	0	0	0	0	
Public Infrastructure (AYMK)	0	0	0	0	0	0	0	
Absolute Return								
Absolute Return Pool (AYTC)	0	0	0	0	0	0	0	
Fixed Income								
Taxable Municipal Bond Pool (AYZC)	0	0	0	0	0	0	0	
US Treasury Fixed Income Pool (AY1A)	0	0	0	0	0	0	0	
Mondrian Inv. Partners Inc (AY63)	0	0	0	0	0	0	0	
High Yield Pool (AYPK)	0	0	0	0	0	0	0	
Lazard Emerging Income (AY5M)	0	0	0	0	0	0	0	
Tactical Fixed Income Pool (AYIC)	0	0	0	0	0	0	0	
Short-term Fixed Income								
State of AK Short Term Pool (AY70)	0	0	0	0	0	0	0	



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

November 22, 2016

Traci Wright
State Street Global Services
IIS Public Funds
1200 Crown Colony Drive, CC5
Quincy, MA 02169

Dear Traci:

RE: Capital Contribution Blue Glacier Fund, L.P. – Class C-2

This letter is your authorization to transfer **\$3,239,513.00** on **Friday, November 25, 2016** from account AY70 to account AY9F using the currently applicable absolute return ratios and then wire transfer the full amount as soon as possible using the following instructions:

Bank Name: The Bank of New York Mellon
ABA Number: 021-000-018
Account Name: Blue Glacier Fund, L.P. (Class C-2)
Account Number: 890-1302-112
Reference: Investor – Capital Contribution – Friday, November 25, 2016
Reference Details: Alaska Retirement Management Board on behalf of the State of Alaska Retirement and Benefits Plans Trust

Please provide the Fed Confirmation number for this transaction to Sarah Baulch of Bank of New York Mellon via e-mail at Sarah.Baulch@bnymellon.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Gary M. Bader".

For Gary M. Bader
Chief Investment Officer

GMB/sv

cc: Scott Jones, Comptroller
Bob Mitchell, Deputy Chief Investment Officer
Zachary Hanna, Investment Officer
Sarah Baulch, Bank of New York Mellon
Travis Keith, Crestline Investors, Inc.



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Revenue

ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

December 9, 2016

David Mabry
Managing Director
Crestline Investors, Inc.
201 Main Street, Suite 1900
Fort Worth, Texas 76102

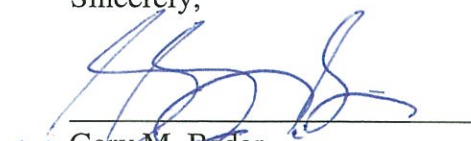
Dear David:

RE: Redemption from Blue Glacier Fund, L.P. – Class C-2

On Tuesday December 13, 2016, please redeem and wire transfer **\$26,173,800.00** to the following account at State Street Bank:

State Street Bank
ABA Number: 011-000-028
Account Number: 00132191
Account Name: State of Alaska – AY9F
Attn: Traci Wright, 617-664-7218

Sincerely,


for Gary M. Bader
Chief Investment Officer

GMB/sy 

cc: Scott Jones, Comptroller
Bob Mitchell, Investment Officer
Zachary Hanna, Investment Officer
Nancy Fong, Bank of New York
Traci Wright, State Street Bank.



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Revenue

ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

December 15, 2016

Traci Wright
State Street Global Services
IIS Public Funds
1200 Crown Colony Drive, CC5
Quincy, MA 02169

Dear Traci:

RE: Capital Contribution Blue Glacier Fund, L.P. – Class C-2

This letter is your authorization to transfer **\$16,178,230.00** on **Monday, December 19, 2016** from account AY70 to account AY9F using the currently applicable absolute return ratios and then wire transfer the full amount as soon as possible using the following instructions:

Bank Name: The Bank of New York Mellon
ABA Number: 021-000-018
Account Name: Blue Glacier Fund, L.P. (Class C-2)
Account Number: 890-1302-112
Reference: Investor – Capital Contribution – Monday, December 19, 2016
Reference Details: Alaska Retirement Management Board on behalf of the State of Alaska Retirement and Benefits Plans Trust

Please provide the Fed Confirmation number for this transaction to Sarah Baulch of Bank of New York Mellon via e-mail at Sarah.Baulch@bnymellon.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "G. Bader".

for Gary M. Bader
Chief Investment Officer

GMB/sv

cc: Scott Jones, Comptroller
Bob Mitchell, Deputy Chief Investment Officer
Zachary Hanna, Investment Officer
Sarah Baulch, Bank of New York Mellon
Travis Keith, Crestline Investors, Inc.



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Revenue

ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

January 19, 2017

Traci Wright
State Street Global Services
IIS Public Funds
1200 Crown Colony Drive, CC5
Quincy, MA 02169

Dear Traci:

RE: Capital Contribution Blue Glacier Fund, L.P. – Class C-2

This letter is your authorization to transfer **\$9,201,789.00** on **Tuesday, January 24, 2017** from account AY70 to account AY9F using the currently applicable absolute return ratios and then wire transfer the full amount as soon as possible using the following instructions:

Bank Name: The Bank of New York Mellon
ABA Number: 021-000-018
Account Name: Blue Glacier Fund, L.P. (Class C-2)
Account Number: 890-1302-112
Reference: Investor – Capital Contribution – Tuesday, January 24, 2017
Reference Details: Alaska Retirement Management Board on behalf of the State of Alaska Retirement and Benefits Plans Trust

Please provide the Fed Confirmation number for this transaction to Sarah Baulch of Bank of New York Mellon via e-mail at Sarah.Baulch@bnymellon.com.

Sincerely,

A handwritten signature in black ink that reads "Gary M. Bader".

Gary M. Bader
Chief Investment Officer

GMB/mab
sw

cc: Scott Jones, Comptroller
Bob Mitchell, Deputy Chief Investment Officer
Zachary Hanna, Investment Officer
Sarah Baulch, Bank of New York Mellon
Travis Keith, Crestline Investors, Inc.



THE STATE
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Fax: 907.465.2389

November 28, 2016

Traci Wright
State Street Global Services
IIS Public Funds
1200 Crown Colony Drive, CC2
Quincy, MA 02169

Dear Ms. Wright,

The Alaska Retirement Management Board (ARMB) requests the following changes to be made on Tuesday, November 29, 2016:

Small Cap Transition Account (AY43)	< \$12.94 >
Luther King Small Cap (AY4F)	< \$2.70 >
Short Term Pool (AY70)	\$15.64

Please take this letter as direction to transfer \$15.64 from the Small Cap Pool (AYQC) to the Short Term Pool (AY70).

This transaction applies to:

ARMB Defined Benefit Pension Plans:	AY21, AY22, AY23, AY24
ARMB Retirement Health Funds:	AYW2, AYW3, AYW4
ARMB Defined Contribution Funds:	AY6G, AY6H, AY6I, AYX2, AYX3, AYY2, AYY3

Please process the transfer using the applicable sending pool ratios for the above funds.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

A handwritten signature in cursive script that reads "Gary M. Bader".

Gary M. Bader
Chief Investment Officer

Cc: Gail Schubert, ARMB Chair
Randall Hoffbeck, Commissioner
Pamela Leary, Director

Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer
Mike Barnhill, State Investment Officer
Shane Carson, State Investment Officer

GMB/smh



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PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

November 22, 2016

Traci Wright
State Street Global Services
IIS Public Funds
1200 Crown Colony Drive, CC2
Quincy, MA 02169

Dear Ms. Wright:

The Alaska Retirement Management Board (ARMB) requests the following changes to be made on **December 1, 2016**:

[1]

Account Name	Amount
BlackRock ACWI Ex-US IMI (AY6U)	(\$250,000,000)
Short-Term Fixed Income Pool (AY70)	\$250,000,000

[2]

Please take this letter as direction to make the following pool-level transfer:

Pool Name	Amount
International Equity Large Cap Pool (AYRC)	(\$250,000,000)
Short-Term Fixed Income Pool (AY70)	\$250,000,000

Please process the pool-level transfer using the applicable sending pool percentage of ownership ratios on December 1, 2016.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

FM
Gary M. Bader
Chief Investment Officer

Cc: Gail Schubert, ARMB Chair
Randall Hoffbeck, Commissioner
Pamela Leary, Director

Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer
Victor Djajalie, State Investment Officer
Emily Howard, State Investment Officer
Mike Barnhill, State Investment Officer
Shane Carson, State Investment Officer

GMB/smh



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ALASKA RETIREMENT MANAGEMENT BOARD

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Fax: 907.465.2389

December 2, 2016

John Mirante
BMO Global Asset Management
115 S. LaSalle Street, 11th Floor
Chicago, IL 60603

Dear Mr. Mirante:

As we have previously communicated, the Alaska Retirement Management Board (ARMB) has decided to hire BMO Global Asset Management to manage a Disciplined Small Cap Core Strategy.

On December 15, 2016, \$75,000,000 will be available for investment in the BMO Small Cap (AYGN) separate account.

Our contact at State Street Bank, Traci Wright, can be reached at (617) 664-7218.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

A handwritten signature in cursive script that reads "Gary M. Bader".

Gary M. Bader
Chief Investment Officer

Cc: Gail Schubert, ARMB Chair
Randall Hoffbeck, Commissioner
Pamela Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer
Mike Barnhill, State Investment Officer
Shane Carson, State Investment Officer

GMB/smh



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Main: 907.465.2300
Fax: 907.465.2389

December 2, 2016

Alex Slivka
McKinley Capital Management
3301 C Street, Suite 500
Anchorage, AK 99503

Dear Mr. Slivka,

The Alaska Retirement Management Board (ARMB) is in the process of rebalancing its asset allocation. In order to work towards the Board's target allocation, I direct you to make the following liquidation:

McKinley Large Cap (AY48) < \$25,000,000 >

I grant the portfolio manager full discretion to sell securities to affect this liquidation when in his/her best judgment it is most advantageous to the ARMB, but in any event, the funds should be available for transfer on December 15, 2016.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

A handwritten signature in black ink that reads "Gary M. Bader".

Gary M. Bader
Chief Investment Officer

Cc: Gail Schubert, ARMB Chair
Randall Hoffbeck, Commissioner
Pamela Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer
Mike Barnhill, State Investment Officer
Shane Carson, State Investment Officer

GMB/smh



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Main: 907.465.2300
Fax: 907.465.2389

December 2, 2016

Matt Egenes
Barrow, Hanley, Mewhinney & Strauss
2200 Ross Avenue, 31st Floor
Dallas, TX 75201

Dear Mr. Egenes,

The Alaska Retirement Management Board (ARMB) is in the process of rebalancing its asset allocation. In order to work towards the Board's target allocation, I direct you to make the following liquidation:

BHMS Large Cap (AY4U) < \$25,000,000 >

I grant the portfolio manager full discretion to sell securities to affect this liquidation when in his/her best judgment it is most advantageous to the ARMB, but in any event, the funds should be available for transfer on December 15, 2016.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

A handwritten signature in cursive script that reads "Gary M. Bader".

Gary M. Bader
Chief Investment Officer

Cc: Gail Schubert, ARMB Chair
Randall Hoffbeck, Commissioner
Pamela Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer
Mike Barnhill, State Investment Officer
Shane Carson, State Investment Officer

GMB/smh



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Juneau, Alaska 99811-0405
Main: 907.465.2300
Fax: 907.465.2389

December 2, 2016

Kevin McGrory
Quantitative Management Associates
2 Gateway Center, 6th Floor
Newark, NJ 07102

Dear Mr. McGrory:

The Alaska Retirement Management Board (ARMB) is in the process of rebalancing its asset allocation. In order to work towards the Board's target allocation, I direct you to make the following liquidation:

QMA Large Cap (AY4V) < \$25,000,000 >

I grant the portfolio manager full discretion to sell securities to affect this liquidation when in his/her best judgment it is most advantageous to the ARMB, but in any event, the funds should be available for transfer on December 15, 2016.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

A handwritten signature in cursive script that reads "Gary M. Bader".

Gary M. Bader
Chief Investment Officer

Cc: Gail Schubert, ARMB Chair
Randall Hoffbeck, Commissioner
Pamela Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer
Mike Barnhill, State Investment Officer
Shane Carson, State Investment Officer

GMB/smh



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333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

December 22, 2016

Arvin Soh
Portfolio Manager
GAM USA, Inc.
One Rockefeller Plaza, 21st Floor
New York, NY 10020

Dear Arvin:

RE: Redemption from Glacier Bear Fund, L.P.

On Thursday, December 29, 2016, please redeem and wire transfer **\$10,500,000.00** to the following account at State Street Bank:

State Street Bank
ABA Number: 011-000-028
Account Number: 00566182
Account Name: State of Alaska – AY8M
Attn: Traci Wright, 617-664-7218

Sincerely,

A handwritten signature in black ink, appearing to read "G. Bader", written over a horizontal line.

for Gary M. Bader
Chief Investment Officer

GMB/mab

cc: Scott Jones, Comptroller
Bob Mitchell, Deputy Chief Investment Officer
Zachary Hanna, Investment Officer
Arvin Soh, GAM
Nancy Fong, Bank of New York
Traci Wright, State Street Bank.



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Fax: 907.465.2389

January 5, 2017

Traci Wright
State Street Global Services
IIS Public Funds
1200 Crown Colony Drive, CC5
Quincy, MA 02169

Dear Ms. Wright:

The Alaska Retirement Management Board (ARMB) requests the following changes to be made on January 10, 2017:

Western Asset Management Co. (AY1D)	\$<25,000,000>
Short-term Fixed Income Pool (AY70)	\$25,000,000

This transaction applies to the ARMB Defined Benefit Pension Plans (AY21-AY24), the ARMB Retirement Health Funds (AYW2-AYW4) and the ARMB Defined Contribution Plans (AY6G-AY6I, AYX2-AYX3, AYY2-AYY3). Please process the transfer using the applicable sending pool ratios.

If you have any questions please call me at (907) 465-4399.

Sincerely,

A handwritten signature in cursive script that reads "Gary M. Bader".

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, Chair ARMB
Pamela Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer
Kelli Barkov, Accounting Technician
Fixed Income Group

GMB/mab



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333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
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Fax: 907.465.2389

January 9, 2017

Traci Wright
State Street Global Services
IIS Public Funds
1200 Crown Colony Drive, CC5
Quincy, MA 02169

* REVISED *

Dear Ms. Wright:

The Alaska Retirement Management Board (ARMB) requests the following changes to be made on January 17, 2017:

Guggenheim Partners (AY1E)	\$<25,000,000>
Short-term Fixed Income Pool (AY70)	\$25,000,000

This transaction applies to the ARMB Defined Benefit Pension Plans (AY21-AY24), the ARMB Retirement Health Funds (AYW2-AYW4) and the ARMB Defined Contribution Plans (AY6G-AY6I, AYX2-AYX3, AYY2-AYY3). Please process the transfer using the applicable sending pool ratios.

If you have any questions please call me at (907) 465-4399.

Sincerely,

A handwritten signature in cursive script that reads "Gary M. Bader".

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, Chair ARMB
Pamela Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer
Kelli Barkov, Accounting Technician
Fixed Income Group

GMB/mab



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ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

January 31, 2017

Dan Ryan
Parametric
1918 8th Ave, Suite 3100
Seattle, WA 98119

RE: Litigation Proceeds

Dear Mr. Ryan,

This letter directs Eaton Vance/ Parametric to invest the proceeds from litigation surrounding BNY Mellon's foreign exchange practices, in the amount of \$1,504.84 into the Parametric Emerging Markets Fund (R6) on behalf of the Alaska Retirement Management Board (ARMB), account number 5038110960.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,

A handwritten signature in cursive script that reads "Gary M. Bader".

Gary M. Bader
Chief Investment Officer

cc: Gail Schubert, ARMB Chair
Randall Hoffbeck, Commissioner
Pamela Leary, Director of Treasury Division
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer

GMB/sjc



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PO Box 110405
Juneau, Alaska 99811-0405
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Fax: 907.465.2389

February 6, 2017

Traci Wright
State Street Global Services
IIS Public Funds
1200 Crown Colony Drive, CC5
Quincy, MA 02169

Dear Traci:

RE: IFM Global Infrastructure (US) L.P.

This letter is your authorization to transfer **\$25,000,000 on February 15, 2017 by 10:00 AM EST** from AY70 to AYRA using the currently applicable ratios and subsequently wire transfer the total amount from AYRA using the following wire instructions:

Bank:	JPMorgan Chase Bank, N.A., New York
SWIFT ID:	CHASUS33
FED ABA:	021000021
Chips ABA:	0002
Account Name:	IFM GLOBAL INFRASTRUCTURE US LP – ClsA Hedged UC
Account Number:	496592416
Reference:	Alaska Retirement Management Board

Thank you for the prompt attention. Please provide the Fed Confirmation Number for this transaction to Susan Gorman via email at susan.gorman@ifminvestors.com.

Sincerely,

A handwritten signature in blue ink, appearing to read "Bob Mitchell".

Bob Mitchell
Acting Chief Investment Officer

GMB/ra *RA* *NPD*

Attachment

cc: Pamela Leary, Director, Treasury Division
Scott Jones, Comptroller
Susan Gorman, IFM (Email copy)

LETTER OF DIRECTION

State Street Global Advisors
State Street Financial Center
One Lincoln Street
Boston, MA 02111

VIA FACSIMILE: 617-204-0088

Please accept this letter as authorization to execute the following instruction(s).

Letter of Direction Date	12/05/2016			
Client Account Name	State of Alaska Defined Benefit Plans			
Client Account Number	AY6A			
Fund Name and Code	Small Cap Overlay Separate Account			
Transaction Type	Change in Notional and Roll (Long) Russell 2k eMini futures			
Transaction Amount(s)	Notional Value	\$16,000,000	In-Kind:	
Trade Date	12/05/2016	Settlement Date (if required)		
Special Instructions	Please adjust notional value to \$16 million			

We understand that we will contact our custodian/trustee to ensure that funds are properly received by SSgA or the appropriate custodian on settlement and/or trade date. This letter should be faxed to the SSgA Boston office at 617-204-0088.

Sincerely yours,


Authorized Signature

12/05/2016
Date

Gary M. Bader
Authorized Signator Name (Printed)

(907) 465-4399
Phone

cc: JP Morgan

LETTER OF DIRECTION

State Street Global Advisors
State Street Financial Center
One Lincoln Street
Boston, MA 02111

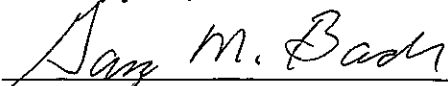
VIA FACSIMILE: 617-204-0088

Please accept this letter as authorization to execute the following instruction(s).

Letter of Direction Date	12/05/2016			
Client Account Name	State of Alaska Defined Benefit Plans			
Client Account Number	AY6B			
Fund Name and Code	Large Cap Overlay Separate Account			
Transaction Type	Change in Notional and Roll (Long) S&P500 eMini futures			
Transaction Amount(s)	Notional Value	\$16,000,000	In-Kind:	
Trade Date	12/05/2016	Settlement Date (if required)		
Special Instructions	Please adjust notional value to \$16 million			

We understand that we will contact our custodian/trustee to ensure that funds are properly received by SSgA or the appropriate custodian on settlement and/or trade date. This letter should be faxed to the SSgA Boston office at 617-204-0088.

Sincerely yours,


Authorized Signature

12/05/2016
Date

Gary M. Bader
Authorized Signator Name (Printed)

(907) 465-4399
Phone

cc: JP Morgan



THE STATE
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Department of Revenue

ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
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LETTER OF DIRECTION

State Street Global Advisors
State Street Financial Center
One Lincoln Street
Boston, MA 02111

VIA FACSIMILE: 617-204-0088

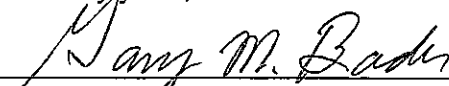
Please accept this letter as authorization to execute the following instruction(s).

Letter of Direction Date	12/05/2016			
Client Account Name	State of Alaska Defined Benefit Plans			
Client Account Number	AYG1			
Fund Name and Code	Small Cap Portable Alpha Overlay Separate Account			
Transaction Type	Roll (Short) Russell eMini futures (buy Dec. contract and sell Mar. contract)			
Transaction Amount(s)	Notional Value	\$380,000,000 +/-	In-Kind:	
Trade Date	12/07/2016	Settlement Date (if required)		
Special Instructions	<p>With respect to accounts AYG1 and AYG2, please employ a custom strategy for all futures contracts which will seek to target a ratio of 46% or lower between the spread traded for the Russell 2000 futures (discount of the March future to the December future) and the S&P500 futures (discount of the March future to the December future). To be clear, the spread traded on Russell 2000 will ideally be 46% of the spread traded for the S&P 500 or lower and contracts should be traded together. SSGA shall endeavor to complete the trade within 4 business days of receipt of this instruction. Timing and sizing of the trades are at SSGA's discretion.</p> <p>In the event that this ratio has not been achieved by 3:30 pm Eastern Standard Time (11:00 am Alaska Standard Time) on December 12 (Day 4 of the 4-Day Trading Window), SSGA shall notify State of Alaska and await new instruction.</p> <p>By submitting this Letter of Direction, State of Alaska hereby acknowledges and agrees that, until an amendment to the</p>			

	Investment Management Agreement, dated July 1, 2006 ("the Agreement") which further details the requirement to employ a custom strategy is in place, SSGA shall not be considered in breach of the Agreement, nor will SSGA be deemed to have breached any of the other investment constraints stipulated in the Agreement or Investment Management Guidelines. SSGA shall also not be responsible for any deviations from any risk, performance or return provisions of the Agreement or Investment Management Guidelines that arise as a result of SSGA's activities in completing the above detailed transactions.
--	---

We understand that we will contact our custodian/trustee to ensure that funds are properly received by SSgA or the appropriate custodian on settlement and/or trade date. Separate LODs will be transmitted to transfer cash into AYG1 and AYG2 based on the timing and settlement of these rolls. This letter, authorized below, should be faxed to the SSgA Boston office at 617-204-0088.

Sincerely yours,


Authorized Signature

12/05/2016
Date

Gary M. Bader
Authorized Signator Name (Printed)

(907) 465-4399
Phone



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Revenue

ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

LETTER OF DIRECTION

State Street Global Advisors
State Street Financial Center
One Lincoln Street
Boston, MA 02111

VIA FACSIMILE: 617-204-0088

Please accept this letter as authorization to execute the following instruction(s).

Letter of Direction Date	12/05/2016		
Client Account Name	State of Alaska Defined Benefit Plans		
Client Account Number	AYG2		
Fund Name and Code	Large Cap Portable Alpha Overlay Separate Account		
Transaction Type	Roll (Long) S&P500 eMini futures (sell Dec. contract and buy Mar. contract)		
Transaction Amount(s)	Notional Value	\$420,000,000 +/-	In-Kind:
Trade Date	12/07/2016	Settlement Date (if required)	
Special Instructions	<p>With respect to accounts AYG1 and AYG2, please employ a custom strategy for all futures contracts which will seek to target a ratio of 46% or lower between the spread traded for the Russell 2000 futures (discount of the March future to the December future) and the S&P500 futures (discount of the March future to the December future). To be clear, the spread traded on Russell 2000 will ideally be 46% of the spread traded for the S&P 500 or lower and contracts should be traded together. SSGA shall endeavor to complete the trade within 4 business days of receipt of this instruction. Timing and sizing of the trades are at SSGA's discretion.</p> <p>In the event that this ratio has not been achieved by 3:30 pm Eastern Standard Time (11:00 am Alaska Standard Time) on December 12 (Day 4 of the 4-Day Trading Window), SSGA shall notify State of Alaska and await new instruction.</p> <p>By submitting this Letter of Direction, State of Alaska hereby acknowledges and agrees that, until an amendment to the</p>		

	Investment Management Agreement, dated July 1, 2006 ("the Agreement") which further details the requirement to employ a custom strategy is in place, SSGA shall not be considered in breach of the Agreement, nor will SSGA be deemed to have breached any of the other investment constraints stipulated in the Agreement or Investment Management Guidelines. SSGA shall also not be responsible for any deviations from any risk, performance or return provisions of the Agreement or Investment Management Guidelines that arise as a result of SSGA's activities in completing the above detailed transactions.
--	---

We understand that we will contact our custodian/trustee to ensure that funds are properly received by SSgA or the appropriate custodian on settlement and/or trade date. Separate LODs will be transmitted to transfer cash into AYG1 and AYG2 based on the timing and settlement of these rolls. This letter, authorized below, should be faxed to the SSgA Boston office at 617-204-0088.

Sincerely yours,



Authorized Signature

12/05/2016

Date

Gary M. Bader

Authorized Signator Name (Printed)

(907) 465-4399

Phone



THE STATE
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Department of Revenue

ALASKA RETIREMENT MANAGEMENT BOARD

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LETTER OF DIRECTION

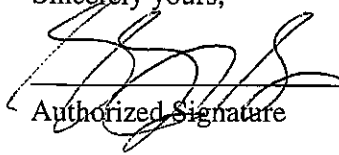
State Street Global Advisors
State Street Financial Center
One Lincoln Street
Boston, MA 02111

Please accept this letter as authorization to execute the following instruction(s).

Letter of Direction Date	12/09/2016			
Client Account Name	State of Alaska Defined Benefit Plans			
Client Account Number	AYG2			
Fund Name and Code	Large Cap Portable Alpha Overlay Separate Account			
Transaction Type	Buy (Long) S&P500 eMini futures (Mar. contract)			
Transaction Amount(s)	Notional Value	\$4,000,000	In-Kind:	
Trade Date	Begin 12/09/2016	Settlement Date (if required)		
Special Instructions	<p>Please buy the equivalent eMini S&P 500 March contracts of a notional value of \$4-million. Market close is acceptable, but if good execution is available earlier, that is the preference.</p> <p>By submitting this Letter of Direction, State of Alaska hereby acknowledges and agrees that, until an amendment to the Investment Management Agreement, dated July 1, 2006 ("the Agreement") which further details the requirement to employ a custom strategy is in place, SSGA shall not be considered in breach of the Agreement, nor will SSGA be deemed to have breached any of the other investment constraints stipulated in the Agreement or Investment Management Guidelines. SSGA shall also not be responsible for any deviations from any risk, performance or return provisions of the Agreement or Investment Management Guidelines that arise as a result of SSGA's activities in completing the above detailed transactions.</p>			

We understand that we will contact our custodian/trustee to ensure that funds are properly received by SSGA or the appropriate custodian on settlement and/or trade date. A separate LOD will be transmitted if necessary to transfer funds into AYG1 and AYG2 based on the volume of contracts successfully executed under this LOD. This letter, authorized below, should be faxed to the SSGA Boston office at 617-204-0088.

Sincerely yours,


Authorized Signature

12/09/2016

Date

Fv! Gary M. Bader
Authorized Signator Name (Printed)

(907) 465-4399

Phone



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Revenue

ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

LETTER OF DIRECTION

State Street Global Advisors
State Street Financial Center
One Lincoln Street
Boston, MA 02111

Please accept this letter as authorization to execute the following instruction(s).

Letter of Direction Date	01/04/2017			
Client Account Name	State of Alaska Defined Benefit Plans			
Client Account Number	AYG2			
Fund Name and Code	Large Cap Portable Alpha Overlay Separate Account			
Transaction Type	Buy (Long) S&P500 eMini futures (Mar. contract)			
Transaction Amount(s)	Notional Value	\$25,000,000	In-Kind:	
Trade Date	Begin 01/04/2017	Settlement Date (if required)		
Special Instructions	<p>Please buy the equivalent eMini S&P 500 March contracts of a notional value of \$25-million. Market close is acceptable.</p> <p>By submitting this Letter of Direction, State of Alaska hereby acknowledges and agrees that, until an amendment to the Investment Management Agreement, dated July 1, 2006 (“the Agreement”) which further details the requirement to employ a custom strategy is in place, SSGA shall not be considered in breach of the Agreement, nor will SSGA be deemed to have breached any of the other investment constraints stipulated in the Agreement or Investment Management Guidelines. SSGA shall also not be responsible for any deviations from any risk, performance or return provisions of the Agreement or Investment Management Guidelines that arise as a result of SSGA’s activities in completing the above detailed transactions.</p>			

We understand that we will contact our custodian/trustee to ensure that funds are properly received by SSgA or the appropriate custodian on settlement and/or trade date. A separate LOD will be transmitted if necessary to transfer funds into AYG1 and AYG2 based on the volume of contracts successfully executed under this LOD. This letter, authorized below, should be faxed to the SSgA Boston office at 617-204-0088.

Sincerely yours,

Gary M. Bader
Authorized Signature

01/04/2017
Date

Gary M. Bader
Authorized Signator Name (Printed)

(907) 465-4399
Phone



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Revenue
ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

January 4, 2017

Traci Wright
State Street Global Services
IIS Public Funds
1200 Crown Colony Drive, CC2
Quincy, MA 02169

RE: Letter of Direction.

Dear Ms. Wright:

The Alaska Retirement Management Board (ARMB) requests the following changes to be made with a trade date and settlement date of Thursday, January 5, 2017. Please use the percentage of ownership ratios from the sending pool in all instances.

[1.] The ARMB legacy funds sell the following of the G-series fund-of-funds:

Please sell each Selling Fund's ownership in the G-series fund-of-fund, as indicated in the table below. Further, please sell the amounts indicated in the table below from each Selling Fund.

Selling Fund	Fund of Fund Sold	Amount	Selling Fund Name
AYKX	AYGA	\$ 25,000,000.00	AYKX - Internally Managed S&P 600
AY4G	AYGB	\$ -	AY4G - Jennison Associates
AY4Q	AYGD	\$ -	AY4Q - Barrow, Hanley, Mewhinney & Strauss (BHMS)
AY5F	AYGE	\$ -	AY5F - Lord Abbett Small Cap Growth
AY5G	AYGF	\$ -	AY5G - Frontier Capital Management Company
AYKN	AYGH	\$ -	AYKN - Fidelity (FIAM) Small Company
AY5H	AYGJ	\$ -	AY5H - Victory Capital Management
AYKV	AYGL	\$ -	AYKV - SSgA Managed Volatility Russell 2000

[2.] Transfer of proceeds into the Large Cap Portable Alpha Fund:

Please use the proceeds from Step 1 to buy the Portable Alpha Fund (AYG2).

[3.] Portable Alpha Fund buys Small Cap Domestic Equity Portable Alpha:

Please use the proceeds from Step 2 to buy the Small Cap Domestic Equity Portable Alpha (AYG1).

[4.] The Small Cap Domestic Equity Portable Alpha (AYG1) buys the following of the G-series fund-of funds:

Please buy the G-series fund-of-funds, as indicated in the table below, on behalf of Small Cap Domestic Equity Portable Alpha (AYG1).

Buying Fund	Fund of Fund Bought	Amount	Bought Fund Name
AYG1	AYGA	\$ 25,000,000.00	AYKX - Internally Managed S&P 600
AYG1	AYGB	\$ -	AY4G - Jennison Associates
AYG1	AYGD	\$ -	AY4Q - Barrow, Hanley, Mewhinney & Strauss (BHMS)
AYG1	AYGE	\$ -	AY5F - Lord Abbett Small Cap Growth
AYG1	AYGF	\$ -	AY5G - Frontier Capital Management Company
AYG1	AYGH	\$ -	AYKN - Fidelity (FIAM) Small Company
AYG1	AYGJ	\$ -	AY5H - Victory Capital Management
AYG1	AYGL	\$ -	AYKV - SSgA Managed Volatility Russell 2000

All transactions listed above in steps one through four are for accounting purposes only.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,



Gary M. Bader
Chief Investment Officer

Cc: Randall Hoffbeck, Commissioner
Gail Schubert, ARMB Chair
Pamela Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer
Shane Carson, State Investment Officer

GMB/bm



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Revenue

ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

January 19, 2017

Traci Wright
State Street Global Services
IIS Public Funds
1200 Crown Colony Drive, CC2
Quincy, MA 02169

RE: Letter of Direction.

Dear Ms. Wright:

The Alaska Retirement Management Board (ARMB) requests the following changes to be made with a trade date and settlement date of Friday, January 20, 2017. Please use the percentage of ownership ratios from the sending pool in all instances.

[1.] The ARMB legacy funds sell the following of the G-series fund-of-funds:

Please sell each Selling Fund's ownership in the G-series fund-of-fund, as indicated in the table below. Further, please sell the amounts indicated in the table below from each Selling Fund.

Selling Fund	Fund of Fund Sold	Amount	Selling Fund Name
AYKX	AYGA	\$ 31,500,000.00	AYKX - Internally Managed S&P 600
AY4G	AYGB	\$ -	AY4G - Jennison Associates
AY4Q	AYGD	\$ -	AY4Q - Barrow, Hanley, Mewhinney & Strauss (BHMS)
AY5F	AYGE	\$ -	AY5F - Lord Abbett Small Cap Growth
AY5G	AYGF	\$ -	AY5G - Frontier Capital Management Company
AYKN	AYGH	\$ -	AYKN - Fidelity (FIAM) Small Company
AY5H	AYGJ	\$ -	AY5H - Victory Capital Management
AYKV	AYGL	\$ (31,500,000.00)	AYKV - SSgA Managed Volatility Russell 2000

[2.] Transfer of proceeds into the Large Cap Portable Alpha Fund:

Please use the proceeds from Step 1 to buy the Portable Alpha Fund (AYG2).

[3.] Portable Alpha Fund buys Small Cap Domestic Equity Portable Alpha:

Please use the proceeds from Step 2 to buy the Small Cap Domestic Equity Portable Alpha (AYG1).

[4.] The Small Cap Domestic Equity Portable Alpha (AYG1) buys the following of the G-series fund-of funds:

Please buy the G-series fund-of-funds, as indicated in the table below, on behalf of Small Cap Domestic Equity Portable Alpha (AYG1).

Buying Fund	Fund of Fund Bought	Amount	Bought Fund Name
AYG1	AYGA	\$ 31,500,000.00	AYKX - Internally Managed S&P 600
AYG1	AYGB	\$ -	AY4G - Jennison Associates
AYG1	AYGD	\$ -	AY4Q - Barrow, Hanley, Mewhinney & Strauss (BHMS)
AYG1	AYGE	\$ -	AY5F - Lord Abbett Small Cap Growth
AYG1	AYGF	\$ -	AY5G - Frontier Capital Management Company
AYG1	AYGH	\$ -	AYKN - Fidelity (FIAM) Small Company
AYG1	AYGJ	\$ -	AY5H - Victory Capital Management
AYG1	AYGL	\$ (31,500,000.00)	AYKV - SSgA Managed Volatility Russell 2000

All transactions listed above in steps one through four are for accounting purposes only.

If you have any questions, please do not hesitate to contact me at (907) 465-4399.

Sincerely,



Gary M. Bader
Chief Investment Officer

Cc: Randall Hoffbeck, Commissioner
Gail Schubert, ARMB Chair
Pamela Leary, Director
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Bob Mitchell, Deputy Chief Investment Officer
Shane Carson, State Investment Officer

GMB/bm



THE STATE
of **ALASKA**
GOVERNOR BILL WALKER

Department of Revenue

ALASKA RETIREMENT MANAGEMENT BOARD

333 Willoughby Avenue, 11th Floor
PO Box 110405
Juneau, Alaska 99811-0405
Main: 907.465.3749
Fax: 907.465.2389

December 12, 2016

Michael A. Bowman
Senior Vice President
The Capital Group Companies, Inc.
1 Market Street, Suite 2000
San Francisco, CA 94105

Dear Mr. Bowman,

Please accept this letter as formal notification that The Capital Group Companies, Inc. was removed from the Alaska Retirement Management Board's (ARMB) Manager Watch List at the December 8, 2016 Board meeting.

If you have any questions, please contact our office at (907) 465-4399.

Sincerely,

A handwritten signature in blue ink, appearing to read "G. Bader".

for Gary M. Bader
Chief Investment Officer

Cc: Gail Schubert, ARMB Chair
Randall Hoffbeck, Commissioner
Pamela Leary, Director
Bob Mitchell, Deputy Chief Investment Officer
Scott Jones, State Comptroller
James McKnight, Senior Investment Compliance Officer
Judy Hall, ARMB Liaison

Allianz/RCM Socially Responsible Investment Fund	11.54%			
<i>Benchmark</i>	12.98%	Fail		
<i>CAI MF - Core Equity Style (Net)</i>	13.55%		Fail	
Peer Group Percentile	84%			Fail

State Street Global Advisors
One Lincoln Street
Boston, MA 02111

January 20, 2017

Dear Valued Client,

You previously received a letter from us letting you know that State Street Bank and Trust Company (SSBT) will be transferring its U.S. institutional investment management business to State Street Global Advisors Trust Company (SSGA Trust Company), a Massachusetts non-depository trust company. As stated in that letter, transferring our investment management business to this new trust company is related to State Street's obligations under the Dodd-Frank Act, and is not intended to impact in any way our services, product offerings, teams, strategy, operations, processes, infrastructure or any other aspect of our business.

As part of this transfer, SSBT will be assigning its existing institutional client accounts and agreements to SSGA Trust Company. **We ask that you please sign and return the enclosed *Consent* as soon as possible approving the assignment of your existing agreements with SSBT to SSGA Trust Company.** Please return the *Consent* to trustconsent@ssga.com by January 31, 2017.

If you have any questions, or if you need additional information, please do not hesitate to contact your Relationship Manager.

Respectfully yours,

State Street Global Advisors

CONSENT

Agreement: Investment Management Contract (Contract Number 00-0410) between the State of Alaska, Alaska Retirement Management Board and State Street Bank and Trust Company, dated July 1, 2006, as amended

The undersigned (collectively, the "Client") hereby consents to the assignment of the Agreement referenced above by State Street Bank and Trust Company to State Street Global Advisors Trust Company ("SSGA Trust Company"). SSGA Trust Company shall have all of the rights, powers, duties, and obligations conferred upon State Street Bank and Trust Company under the Agreement in respect of the period from the effective date of such assignment, which shall occur on or after April 1, 2017. The Client and State Street Bank and Trust Company shall retain all of their respective rights and obligations under the Agreement in respect of the period prior to the effective date of such assignment.

By its signature below, SSGA Trust Company hereby accepts such assignment and agrees to be bound by the terms of the Agreement from the date of such assignment.

ALASKA RETIREMENT MANAGEMENT BOARD

By: Mary M. Bader
Title: CIO
Date: 11/27/2017

STATE STREET GLOBAL ADVISORS TRUST COMPANY

By: Barry F.X. Smith
Title: President

Acknowledged and agreed:

STATE STREET BANK AND TRUST COMPANY

By: Katherine S. McKinley
Title: Senior Managing Director

CONSENT

Agreement: Investment Management Agreement (Contract Number 09-0055) between the State of Alaska, Alaska Retirement Management Board and State Street Bank and Trust Company, dated July 21, 2009

The undersigned (collectively, the "Client") hereby consents to the assignment of the Agreement referenced above by State Street Bank and Trust Company to State Street Global Advisors Trust Company ("SSGA Trust Company"). SSGA Trust Company shall have all of the rights, powers, duties, and obligations conferred upon State Street Bank and Trust Company under the Agreement in respect of the period from the effective date of such assignment, which shall occur on or after April 1, 2017. The Client and State Street Bank and Trust Company shall retain all of their respective rights and obligations under the Agreement in respect of the period prior to the effective date of such assignment.

By its signature below, SSGA Trust Company hereby accepts such assignment and agrees to be bound by the terms of the Agreement from the date of such assignment.

ALASKA RETIREMENT MANAGEMENT BOARD

By: Mary M. Boden
Title: CEO
Date: 1/27/2017

STATE STREET GLOBAL ADVISORS TRUST COMPANY

By: Barry F.X. Smith
Title: President

Acknowledged and agreed:

STATE STREET BANK AND TRUST COMPANY

By: Katherine S. McKinley
Title: Senior Managing Director

State Street Global Advisors
One Lincoln Street
Boston, MA 02111

January 20, 2017

Dear Valued Client,

You previously received a letter from us letting you know that State Street Bank and Trust Company ("SSBT") will be transferring its U.S. institutional investment management business to State Street Global Advisors Trust Company ("SSGA Trust Company"), a Massachusetts non-depository trust company subsidiary of SSBT. As stated in that letter, transferring our investment management business to this new trust company is related to State Street's obligations under the Dodd-Frank Act, and is not intended to impact in any way our services, product offerings, teams, strategy, operations, processes, infrastructure or any other aspect of our business.

As part of this transfer, SSBT will appoint SSGA Trust Company as successor trustee to the SSGA Common Trust Fund(s) (the "CTFs") in which you invest pursuant to the applicable Declaration of Trust of the CTFs, effective on or about April 1, 2017.

SSBT is seeking your consent to amend the Agreement(s) of Trust of the grantor trust(s) that hold your organization's investment in the CTFs to allow SSBT to appoint SSGA Trust Company as successor trustee of the grantor trust(s).

We ask that you please complete, sign and return the enclosed *Consent* as soon as possible approving the amendment of your Agreement(s) of Trust to allow SSBT to appoint SSGA Trust Company as successor trustee of your grantor trust(s). Please return the *Consent* to rustconsent@ssga.com by February 28, 2017.

These changes are necessary to achieve the transfer of all of SSBT's investment management business to SSGA Trust Company and we appreciate your cooperation. It is important to note that the appointment of SSGA Trust Company as trustee of the CTFs and the transfer of your grantor trust(s) from SSBT to SSGA Trust Company will not result in a change in control of the management of your investments in the CTFs. Please find links to Amended and Restated Declaration(s) of Trust and updated Fund Declaration(s), effective April 1, 2017, for the CTF(s) in which you are invested on [Appendix A](#). In addition, you may access these documents in the Reports & Documents Center through the Client Login on [SSGA.com](#).

If you have any questions, or if you need additional information, please do not hesitate to contact your Relationship Manager.

Respectfully yours,

State Street Global Advisors

CONSENT

By signing this Consent, the undersigned agrees to the amendment of the undersigned's Agreement(s) of Trust, whereby State Street Bank and Trust Company ("SSBT") serves as trustee of the grantor trust created thereunder, the assets of which is invested in one or more State Street Global Advisors Common Trust Funds, to permit SSBT to appoint State Street Global Advisors Trust Company ("SSGA Trust Company") as successor trustee to such grantor trust. The undersigned further agrees to SSBT's appointment of SSGA Trust Company as successor trustee, effective on or about April 1, 2017.

By signing this Consent, the undersigned agrees that the terms of its Agreement(s) of Trust will remain unchanged and in full force and effect following SSBT's appointment of SSGA Trust Company as successor trustee under the Agreement(s) of Trust.

This Consent may be executed in two or more counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

Date: 1/27/2017

THE STATE OF ALASKA DEPARTMENT OF REVENUE/TREASURY

By: Nancy M. Bader
Title: CIO
Date: 1/27/2017

STATE STREET GLOBAL ADVISORS TRUST COMPANY

By: Barry F.X. Smith
Title: President

Acknowledged and agreed:

STATE STREET BANK AND TRUST COMPANY

By: Katherine S. McKinley
Title: Senior Managing Director

Appendix A

Declaration of Trust - World Index CTFs

Fund Declaration - State Street MSCI ACWI ex USA Index Non-Lending Common Trust Fund

Fund Declaration - State Street Russell 3000® Index Non-Lending Common Trust Fund

State Street Global Advisors
One Lincoln Street
Boston, MA 02111

January 20, 2017

Dear Valued Client,

You previously received a letter from us letting you know that State Street Bank and Trust Company ("SSBT") will be transferring its U.S. institutional investment management business to State Street Global Advisors Trust Company ("SSGA Trust Company"), a Massachusetts non-depository trust company subsidiary of SSBT. As stated in that letter, transferring our investment management business to this new trust company is related to State Street's obligations under the Dodd-Frank Act, and is not intended to impact in any way our services, product offerings, teams, strategy, operations, processes, infrastructure or any other aspect of our business.

As part of this transfer, SSBT will appoint SSGA Trust Company as successor trustee to the SSGA Common Trust Fund(s) (the "CTFs") and the SSGA ERISA Collective Investment Trusts (the "Commingled Funds" and, together with the CTFs, the "SSGA Collective Funds") in which you invest pursuant to the applicable Declaration of Trust of the SSGA Collective Funds, effective on or about April 1, 2017.

SSBT is seeking your consent to amend the Agreement(s) of Trust of the grantor trust(s) that hold your organization's investment in the CTFs to allow SSBT to appoint SSGA Trust Company as successor trustee of the grantor trust(s). In addition, SSBT is seeking your consent to assign the Participation Agreement(s) that govern your investment in the Commingled Funds to SSGA Trust Company.

We ask that you please complete, sign and return the enclosed *Consent* as soon as possible approving (1) the amendment of your Agreement(s) of Trust to allow SSBT to appoint SSGA Trust Company as successor trustee of your grantor trust(s) and (2) the assignment of your Participation Agreement by SSBT to SSGA Trust Company. Please return the *Consent* to trustconsent@ssga.com by February 28, 2017.

These changes are necessary to achieve the transfer of all of SSBT's investment management business to SSGA Trust Company and we appreciate your cooperation. It is important to note that the appointment of SSGA Trust Company as trustee of the SSGA Collective Funds and the transfer of your grantor trust(s) and Participation Agreement from SSBT to SSGA Trust Company will not result in a change in control of the management of your investments in the SSGA Collective Funds. Please find links to Amended and Restated Declaration(s) of Trust and updated Fund Declaration(s), effective April 1, 2017, for the SSGA Collective Fund(s) in which you are invested on [Appendix A](#). In addition, you may access these documents in the Reports & Documents Center through the Client Login on SSGA.com.

If you have any questions, or if you need additional information, please do not hesitate to contact your Relationship Manager.

Respectfully yours,

State Street Global Advisors

CONSENT

By signing this Consent, the undersigned agrees to the amendment of the undersigned's Agreement(s) of Trust, whereby State Street Bank and Trust Company ("SSBT") serves as trustee of the grantor trust created thereunder, the assets of which is invested in one or more State Street Global Advisors Common Trust Funds, to permit SSBT to appoint State Street Global Advisors Trust Company ("SSGA Trust Company") as successor trustee to such grantor trust. The undersigned further agrees to SSBT's appointment of SSGA Trust Company as successor trustee, effective on or about April 1, 2017.

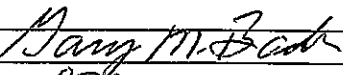
By signing this Consent, the undersigned agrees to the assignment of the undersigned's Participation Agreement(s), pursuant to which the undersigned invests in one or more State Street Global Advisors ERISA collective investment trusts, by SSBT to SSGA Trust Company, effective on or about April 1, 2017.

By signing this Consent, the undersigned agrees that the terms of its (i) Agreement(s) of Trust and (ii) Participation Agreement(s) will remain unchanged and in full force and effect following SSBT's appointment of SSGA Trust Company as successor trustee under the Agreement(s) of Trust and SSBT's assignment of the Participation Agreement(s) to SSGA Trust Company, respectively.

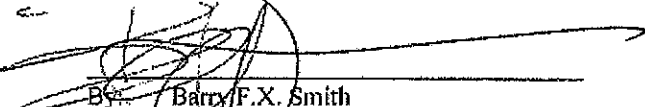
This Consent may be executed in two or more counterparts, each of which will be deemed an original, but all of which together will constitute one and the same instrument.

Date: 1/27/2017

ALASKA RETIREMENT MANAGEMENT BOARD

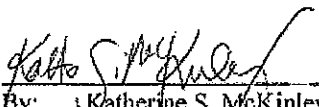
By: 
Title: CI6
Date: 1/27/2017

STATE STREET GLOBAL ADVISORS TRUST COMPANY


By: Barry F.X. Smith
Title: President

Acknowledged and agreed:

STATE STREET BANK AND TRUST COMPANY


By: Katherine S. McKinley
Title: Senior Managing Director

Declaration of Trust - ERISA DB & DC
Declaration of Trust - World Index CTFs

Fund Declaration - State Street Global Equity ex U.S. Index Non-Lending Series Fund Class A
Fund Declaration - State Street Global Equity Index Non-Lending Series Fund Class A
Fund Declaration - State Street MSCI Emerging Markets Index Non-Lending Common Trust Fund
Fund Declaration - State Street MSCI Emerging Markets Small Cap Index Non-Lending Common Trust Fund
Fund Declaration - State Street REIT Index Non-Lending Series Fund Class A
Fund Declaration - State Street Russell All Cap® Index Non-Lending Series Fund Class A
Fund Declaration - State Street S&P 500® Index Non-Lending Series Fund Class A
Fund Declaration - State Street U.S. Bond Index Non-Lending Series Fund Class A
Fund Declaration - State Street U.S. Inflation Protected Bond Index Non-Lending Series Fund Class A
Fund Declaration - State Street U.S. Long Treasury Index Non-Lending Series Fund Class A
Fund Declaration - State Street World Government Bond Ex-U.S. Index Non-Lending QIB Series Fund Class A



PAAMCO and KKR Prisma Form Strategic Partnership to Create New Liquid Alternatives Investment Firm

- *KKR Prisma and PAAMCO will combine to form a new firm, PAAMCO Prisma Holdings, which will have over \$30 billion in assets*
- *The combined business will be majority employee-owned with employees of PAAMCO and KKR Prisma owning 60.1% of the combined business and KKR retaining a 39.9% ownership stake as a long-term strategic partner*
- *The combined business will be jointly run by Jane Buchan, co-Founder and CEO of PAAMCO, and Girish Reddy, co-Founder of KKR Prisma and Head of KKR Hedge Funds*

Irvine, CA and New York, NY, February 6, 2017 – KKR and Pacific Alternative Asset Management Company, LLC ("PAAMCO") today announced that they have entered into a strategic transaction to create a new liquid alternatives investment firm by combining PAAMCO and KKR Prisma. Under the terms of the agreement, the entire businesses of both PAAMCO and KKR Prisma will be contributed to a newly formed company that will operate independently from KKR, and KKR will retain a 39.9% stake as a long-term strategic partner.

This transaction will bring together two leading brands to create one of the largest firms in the liquid alternatives industry, with over \$30 billion of assets under management or advisement and the ability to fulfill a broad range of liquid alternatives needs. Founded in March 2000, PAAMCO is a leading private institutional investment firm with \$24 billion of assets under management or advisement dedicated to offering alternative investment solutions. KKR Prisma, with approximately \$10 billion of assets under management, constructs and manages customized hedge fund portfolios and other products across the spectrum of liquid alternatives investments.

The combined business will operate under the new global brand, PAAMCO Prisma Holdings, with PAAMCO and KKR Prisma's core investment and client teams remaining unchanged. The Prisma and PAAMCO brands and funds will continue to exist side-by-side in their current separate form. The combined enterprise will have all of the features their clients have invested in historically but with the additional benefits of operational scale and access to an even broader suite of investment solutions.

Jane Buchan, co-Founder and CEO of PAAMCO, said: "As the alternatives industry continues to evolve, expanding our reach will further enhance our ability to innovate and to provide leading solutions to our clients. This transformative step will enable us to provide added scale benefits, wider investment options and faster innovation to all of our investors. Organizationally, we are excited by how well Prisma's investment franchise complements our own, and by the possibilities that KKR brings. I look forward to working with Girish to capitalize on the experience and expertise of our combined teams to continue to deliver compelling and value-added solutions to our clients."

Girish Reddy, co-Founder of KKR Prisma and Head of KKR Hedge Funds, added: "Joining forces with PAAMCO will enable us to better serve our clients' evolving investment requirements. I believe greater scale, flexibility, and additional resources will enhance our ability to generate strong investment performance and to build and service bespoke solutions for our clients. Additionally, we look forward to continuing our strong partnership with KKR."

Henry Kravis and George Roberts, co-Founders and co-Chairmen of KKR, stated: "We are bringing together two leading names to create an even stronger liquid alternatives firm. The decision to combine KKR Prisma with PAAMCO is based on our shared view that a larger enterprise with exceptional resources, technology and investment acumen will be even better positioned to support clients in today's marketplace."

Transaction Structure

The transaction is not a monetization event for PAAMCO or Prisma's current management or for KKR. Under the terms of the agreement, the entire businesses of both PAAMCO and KKR Prisma will be contributed to a newly formed company. The new business will be led by co-CEOs Jane Buchan, co-Founder and CEO of PAAMCO, and Girish Reddy, co-Founder of KKR Prisma. As part of the transaction, the combined entity is expected to enhance alignment with investors by re-equitizing the management team and retiring PAAMCO's existing minority owner. The combined business will be majority employee-owned with employees of PAAMCO and KKR Prisma owning 60.1% of the combined firm and KKR retaining a 39.9% ownership stake. PAAMCO Prisma will be a strategic investment for KKR and will not be a portfolio company in a KKR fund. KKR Prisma and PAAMCO investment solutions, investment processes, investment teams, client service teams and regional presence will remain as is at closing.

Subject to the satisfaction of customary closing conditions, including the receipt of requisite regulatory approvals, the transaction is expected to close in the second quarter of 2017.

Pro forma for this transaction, and based on financial information as of September 30, 2016, KKR's hedge fund strategic partnerships would have approximately \$74 billion in assets under management or advisement in the aggregate, of which KKR's pro rata share would be approximately \$24 billion in assets under management or advisement.

KKR was advised by Simpson Thacher & Bartlett LLP, and PAAMCO was advised by Moelis & Company LLC and K&L Gates LLP.

About KKR

KKR is a leading global investment firm that manages investments across multiple asset classes including private equity, energy, infrastructure, real estate, credit and hedge funds. KKR aims to generate attractive investment returns by following a patient and disciplined investment approach, employing world-class people, and driving growth and value creation at the asset level. KKR invests its own capital alongside its partners' capital and brings opportunities to others through its capital markets business. References to KKR's investments may include the activities of its sponsored funds. For additional information about KKR & Co. L.P. (NYSE:KKR), please visit KKR's website at www.kkr.com and on Twitter @KKR_Co.

About PAAMCO

PAAMCO, which manages over \$10 billion in discretionary assets and advises on an additional \$14 billion in assets, is a leading institutional investment firm dedicated to offering alternative investment solutions to the world's preeminent investors. Since its founding in 2000, PAAMCO has focused on investing on behalf of its clients while striving to raise the standard for industry-wide best practices. Headquartered in Irvine, California with a global footprint that extends across North America, South America, Europe and Asia, PAAMCO's clients include large public and private pension funds, sovereign wealth funds, foundations, endowments, insurance companies and financial institutions. The firm is known for its completeAlpha™ approach to hedge fund investing which focuses on delivering performance from early-stage opportunities, controlling costs and protecting client assets. In addition, it offers long-only active equity investing in emerging markets through its PAAMCO Miren division as well as active Fixed Income solutions through PAAMCO Horizons.

Forward Looking Statements

Certain matters discussed in this release constitute forward-looking statements within the meaning of the "safe harbor" provisions of the Private Securities Litigation Reform Act of 1995. Forward-looking statements relate to expectations, beliefs, projections, future plans, anticipated events and similar expressions concerning matters that are not historical facts. The forward-looking statements are based on the parties' respective beliefs, assumptions and expectations of their respective future performance and future events, taking into account information currently available to them. These beliefs, assumptions and expectations can change as a result of many possible events or factors, not all of which are known to the parties or are within their control. The following factors, among others, could cause actual results to vary from the forward-looking statements: the ability of the parties to satisfy the conditions precedent and consummate the proposed transaction (including but not limited to the receipt of all required regulatory approvals), the timing of consummation of the proposed transaction, the ability to achieve any of the anticipated benefits from the transaction, risks related to disruption of management's attention due to the transaction, and the various risks associated with the parties' respective businesses. No party undertakes any obligation to update any forward-looking statements to reflect circumstances or events that occur after the date on which such statements were made except as required by law.

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PAAMCO

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Investor-relations@kkv.com
212-750-8300

Mitchell, Bob G (DOR)

From: Barnhill, Mike A (DOR)
Sent: Monday, February 13, 2017 1:51 PM
To: Barnhill, Mike A (DOR)
Subject: Alaska Retirement Management Board, Securities Lending Program

Dear Manager,

In December 2015, the Alaska Retirement Management Board authorized participation in a program of securities lending, and directed staff to work with State Street to procure and implement such a program. Treasury staff and State Street have completed the necessary steps and are now in the final stages of implementation.

As you are aware, securities lending involves loaning securities that are owned by the Alaska pension systems (and that you manage) for an indeterminate time period, and collecting a premium for the loan of the securities. We anticipate that our securities lending program will go live on approximately February 27.

If you would like to discuss this program or express any concerns regarding the participation in this program of securities that your firm manages, please contact me as soon as possible, and no later than February 23.

Thx!

Mike B.

Michael Barnhill
State Investment Officer
Alaska Department of Revenue
(907) 465-4399

**ALASKA RETIREMENT MANAGEMENT BOARD
FINANCIAL REPORT**

As of January 31, 2017

ALASKA RETIREMENT MANAGEMENT BOARD
Schedule of Investment Income and Changes in Invested Assets by Fund
Fiscal Year-to-Date through January 31, 2017

	Beginning Invested Assets	Investment Income ⁽¹⁾	Net Contributions (Withdrawals)	Ending Invested Assets	% Change in Invested Assets	% Change due to Investment Income ⁽²⁾
<u>Public Employees' Retirement System (PERS)</u>						
<u>Defined Benefit Plans:</u>						
Retirement Trust	\$ 8,209,687,323	\$ 537,122,378	\$ (153,735,250)	\$ 8,593,074,451	4.67%	6.60%
Retirement Health Care Trust	6,773,545,245	437,766,937	(153,065,151)	7,058,247,031	4.20%	6.54%
Total Defined Benefit Plans	14,983,232,568	974,889,315	(306,800,401)	15,651,321,482	4.46%	6.57%
<u>Defined Contribution Plans:</u>						
Participant Directed Retirement	667,523,128	52,619,946	51,124,541	771,267,615	15.54%	7.59%
Health Reimbursement Arrangement	224,830,912	15,274,182	20,289,440	260,394,534	15.82%	6.50%
Retiree Medical Plan	59,563,867	4,111,810	7,293,899	70,969,576	19.15%	6.50%
Defined Benefit Occupational Death and Disability:						
Public Employees	14,541,982	975,252	838,084	16,355,318	12.47%	6.52%
Police and Firefighters	7,181,338	479,029	298,758	7,959,125	10.83%	6.53%
Total Defined Contribution Plans	973,641,227	73,460,219	79,844,722	1,126,946,168	15.75%	7.25%
Total PERS	15,956,873,795	1,048,349,534	(226,955,679)	16,778,267,650	5.15%	6.62%
<u>Teachers' Retirement System (TRS)</u>						
<u>Defined Benefit Plans:</u>						
Retirement Trust	4,939,784,971	323,055,019	(114,614,328)	5,148,225,662	4.22%	6.62%
Retirement Health Care Trust	2,537,521,837	163,940,726	(57,541,730)	2,643,920,833	4.19%	6.53%
Total Defined Benefit Plans	7,477,306,808	486,995,745	(172,156,058)	7,792,146,495	4.21%	6.59%
<u>Defined Contribution Plans:</u>						
Participant Directed Retirement	286,112,304	22,687,602	14,794,734	323,594,640	13.10%	7.73%
Health Reimbursement Arrangement	68,360,784	4,584,018	4,578,796	77,523,598	13.40%	6.49%
Retiree Medical Plan	23,621,452	1,595,653	1,793,608	27,010,713	14.35%	6.51%
Defined Benefit Occupational Death and Disability	3,137,633	204,816	(4,793)	3,337,656	6.37%	6.53%
Total Defined Contribution Plans	381,232,173	29,072,089	21,162,345	431,466,607	13.18%	7.42%
Total TRS	7,858,538,981	516,067,834	(150,993,713)	8,223,613,102	4.65%	6.63%
<u>Judicial Retirement System (JRS)</u>						
Defined Benefit Plan Retirement Trust	143,723,441	9,604,974	2,732,700	156,061,115	8.58%	6.62%
Defined Benefit Retirement Health Care Trust	26,917,606	1,754,260	(109,744)	28,562,122	6.11%	6.53%
Total JRS	170,641,047	11,359,234	2,622,956	184,623,237	8.19%	6.61%
<u>National Guard/Naval Militia Retirement System (MRS)</u>						
Defined Benefit Plan Retirement Trust	35,866,581	1,419,759	(48,963)	37,237,377	3.82%	3.96%
<u>Other Participant Directed Plans</u>						
Supplemental Annuity Plan	3,419,489,723	160,459,383	(21,099,358)	3,558,849,748	4.08%	4.71%
Deferred Compensation Plan	808,795,367	47,505,247	(8,743,174)	847,557,440	4.79%	5.91%
Total All Funds	28,250,205,494	1,785,160,991	(405,217,931)	29,630,148,554		
Total Non-Participant Directed	23,068,284,972	1,501,888,813	(441,294,674)	24,128,879,111	4.60%	6.57%
Total Participant Directed	5,181,920,522	283,272,178	36,076,743	5,501,269,443	6.16%	5.45%
Total All Funds	\$ 28,250,205,494	\$ 1,785,160,991	\$ (405,217,931)	\$ 29,630,148,554	4.88%	6.36%

Notes:

(1) Includes interest, dividends, securities lending, expenses, realized and unrealized gains/losses

(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates and can be found at: <http://www.revenue.state.ak.us/treasury/programs/programs/other/armb/investmentresults.aspx>

ALASKA RETIREMENT MANAGEMENT BOARD
Schedule of Investment Income and Changes in Invested Assets by Fund
For the Month Ended January 31, 2017

	Beginning Invested Assets	Investment Income ⁽¹⁾	Net Contributions (Withdrawals)	Ending Invested Assets	% Change in Invested Assets	% Change due to Investment Income ⁽²⁾
<u>Public Employees' Retirement System (PERS)</u>						
<u>Defined Benefit Plans:</u>						
Retirement Trust	\$ 8,484,311,276	\$ 144,256,025	\$ (35,492,850)	\$ 8,593,074,451	1.28%	1.70%
Retirement Health Care Trust	6,965,104,177	116,347,422	(23,204,568)	7,058,247,031	1.34%	1.67%
Total Defined Benefit Plans	15,449,415,453	260,603,447	(58,697,418)	15,651,321,482	1.31%	1.69%
<u>Defined Contribution Plans:</u>						
Participant Directed Retirement	749,838,685	13,974,006	7,454,924	771,267,615	2.86%	1.85%
Health Reimbursement Arrangement	253,122,214	4,208,618	3,063,702	260,394,534	2.87%	1.65%
Retiree Medical Plan	68,795,359	1,143,273	1,030,944	70,969,576	3.16%	1.65%
Defined Benefit Occupational Death and Disability:						
Public Employees	15,967,807	266,023	121,488	16,355,318	2.43%	1.66%
Police and Firefighters	7,791,046	129,898	38,181	7,959,125	2.16%	1.66%
Total Defined Contribution Plans	1,095,515,111	19,721,818	11,709,239	1,126,946,168	2.87%	1.79%
Total PERS	16,544,930,564	280,325,265	(46,988,179)	16,778,267,650	1.41%	1.70%
<u>Teachers' Retirement System (TRS)</u>						
<u>Defined Benefit Plans:</u>						
Retirement Trust	5,093,249,140	86,624,850	(31,648,328)	5,148,225,662	1.08%	1.71%
Retirement Health Care Trust	2,608,103,128	43,557,623	(7,739,918)	2,643,920,833	1.37%	1.67%
Total Defined Benefit Plans	7,701,352,268	130,182,473	(39,388,246)	7,792,146,495	1.18%	1.69%
<u>Defined Contribution Plans:</u>						
Participant Directed Retirement	314,873,912	5,967,796	2,752,932	323,594,640	2.77%	1.89%
Health Reimbursement Arrangement	75,500,361	1,251,177	772,060	77,523,598	2.68%	1.65%
Retiree Medical Plan	26,314,389	436,345	259,979	27,010,713	2.65%	1.65%
Defined Benefit Occupational Death and Disability	3,282,842	54,824	(10)	3,337,656	1.67%	1.67%
Total Defined Contribution Plans	419,971,504	7,710,142	3,784,961	431,466,607	2.74%	1.83%
Total TRS	8,121,323,772	137,892,615	(35,603,285)	8,223,613,102	1.26%	1.70%
<u>Judicial Retirement System (JRS)</u>						
Defined Benefit Plan Retirement Trust	154,150,667	2,617,378	(706,930)	156,061,115	1.24%	1.70%
Defined Benefit Retirement Health Care Trust	28,144,285	469,282	(51,445)	28,562,122	1.48%	1.67%
Total JRS	182,294,952	3,086,660	(758,375)	184,623,237	1.28%	1.70%
<u>National Guard/Naval Militia Retirement System (MRS)</u>						
Defined Benefit Plan Retirement Trust	36,815,621	546,633	(124,877)	37,237,377	1.15%	1.49%
<u>Other Participant Directed Plans</u>						
Supplemental Annuity Plan	3,523,089,740	45,511,522	(9,751,514)	3,558,849,748	1.02%	1.29%
Deferred Compensation Plan	839,361,452	10,807,216	(2,611,228)	847,557,440	0.98%	1.29%
Total All Funds	29,247,816,101	478,169,911	(95,837,458)	29,630,148,554		
Total Non-Participant Directed	23,820,652,312	401,909,371	(93,682,572)	24,128,879,111	1.29%	1.69%
Total Participant Directed	5,427,163,789	76,260,540	(2,154,886)	5,501,269,443	1.37%	1.41%
Total All Funds	\$ 29,247,816,101	\$ 478,169,911	\$ (95,837,458)	\$ 29,630,148,554	1.31%	1.64%

Notes:

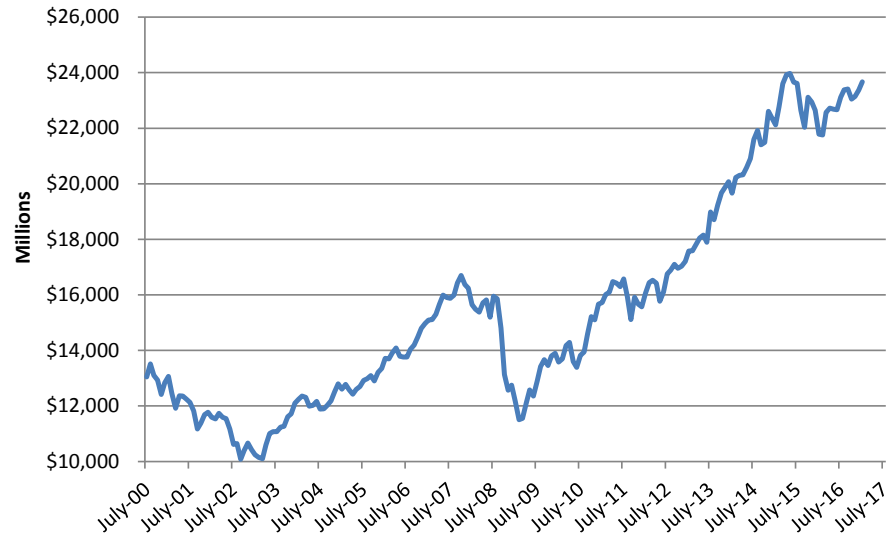
(1) Includes interest, dividends, securities lending, expenses, realized and unrealized gains/losses

(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates and can be found at: <http://www.revenue.state.ak.us/treasury/programs/programs/other/armb/investmentresults.aspx>

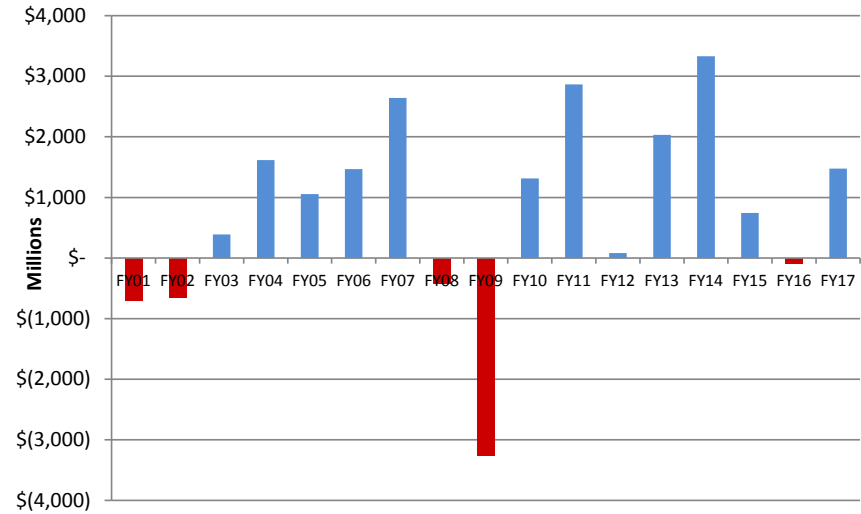
Total Defined Benefit Assets

As of January 31, 2017

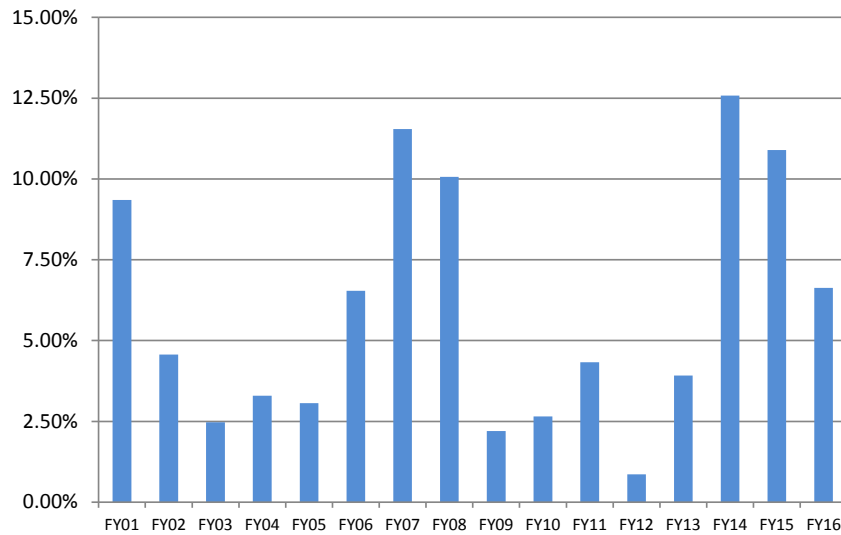
Total Assets History



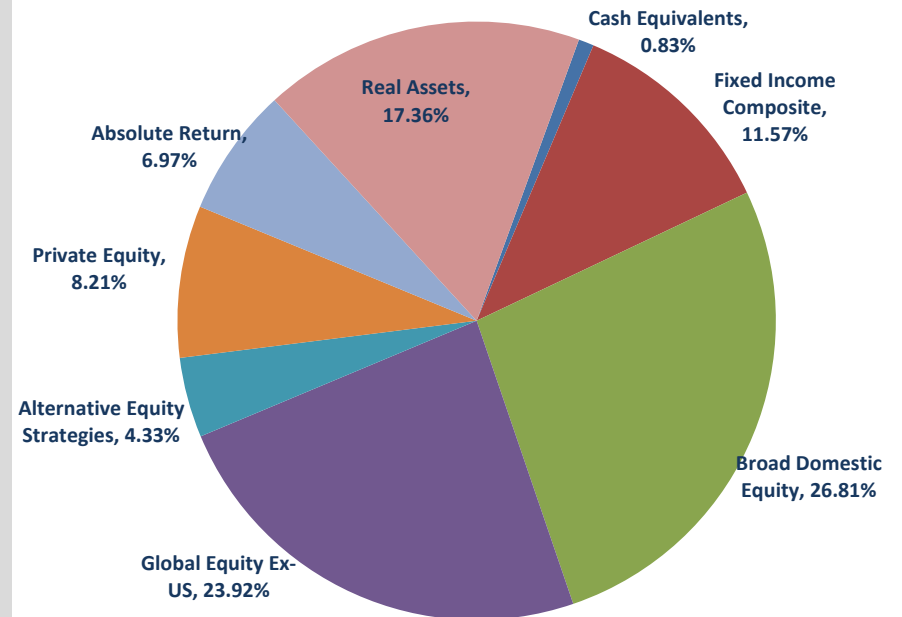
Income by Fiscal Year



5-year Annualized Returns as of Fiscal Year End



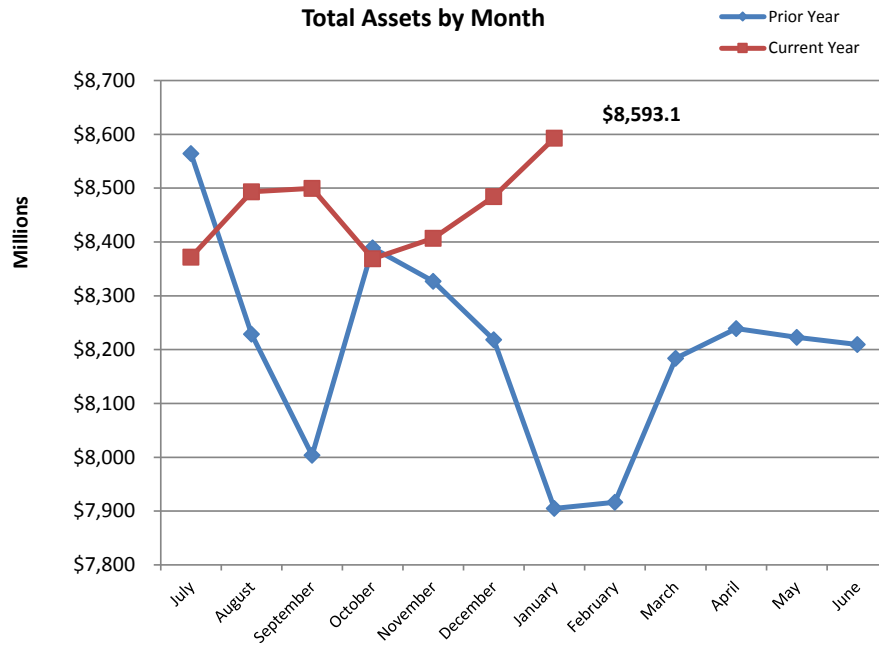
Actual Asset Allocation



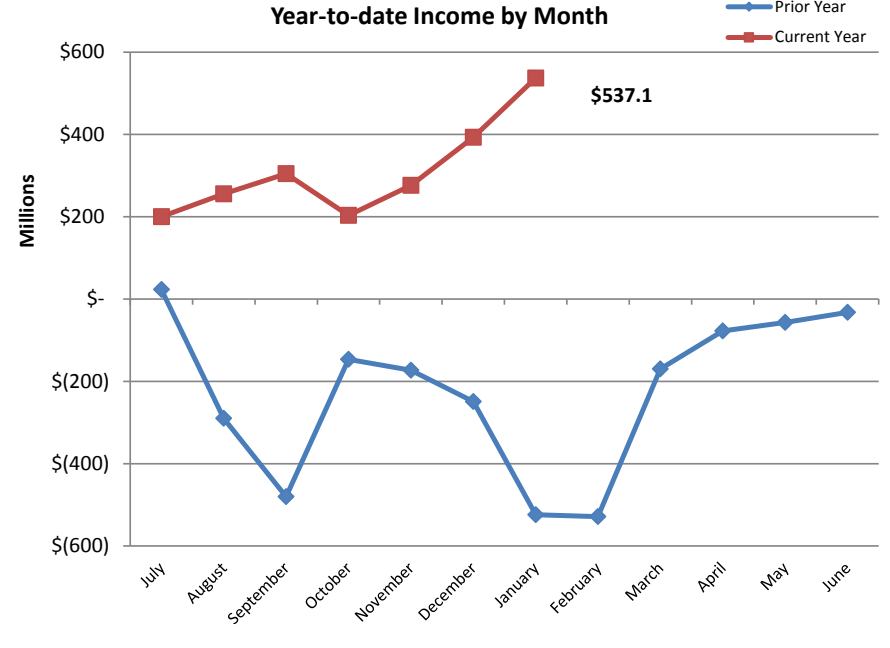
Public Employees' Retirement Pension Trust Fund

Fiscal Year-to-Date through January 31, 2017

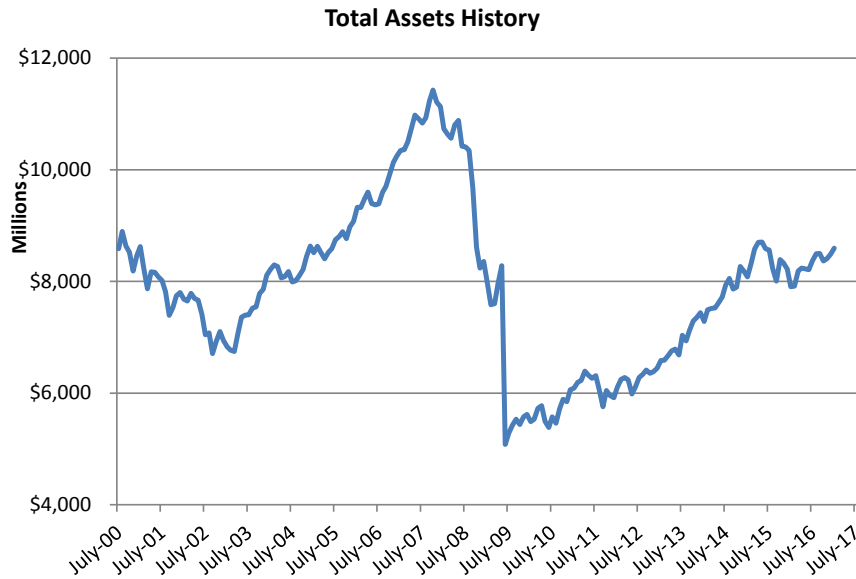
Total Assets by Month



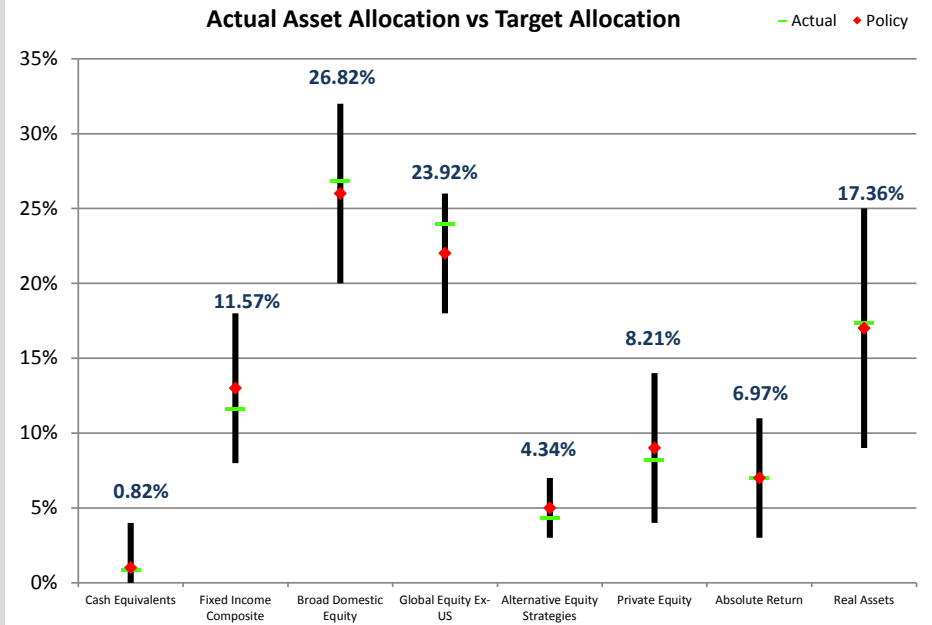
Year-to-date Income by Month



Total Assets History

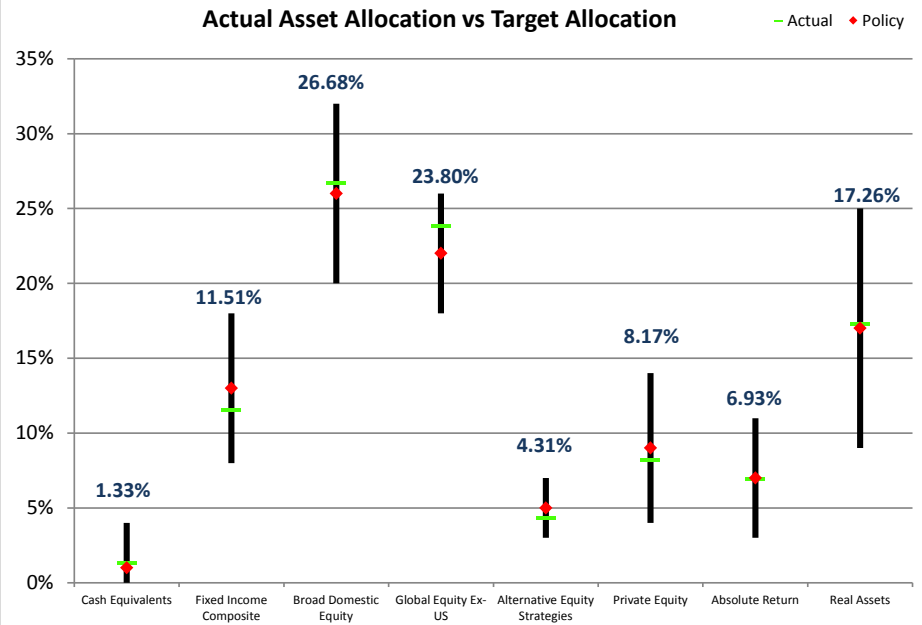
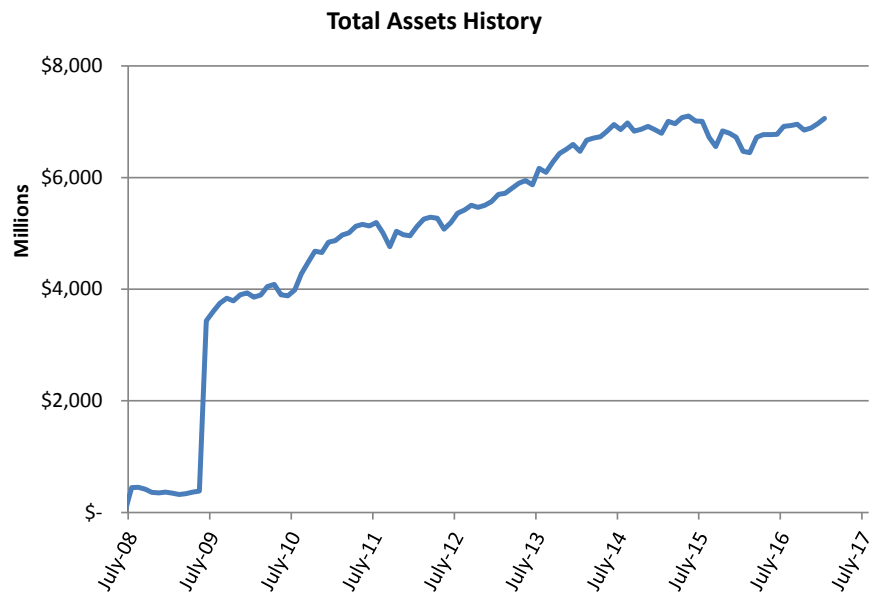
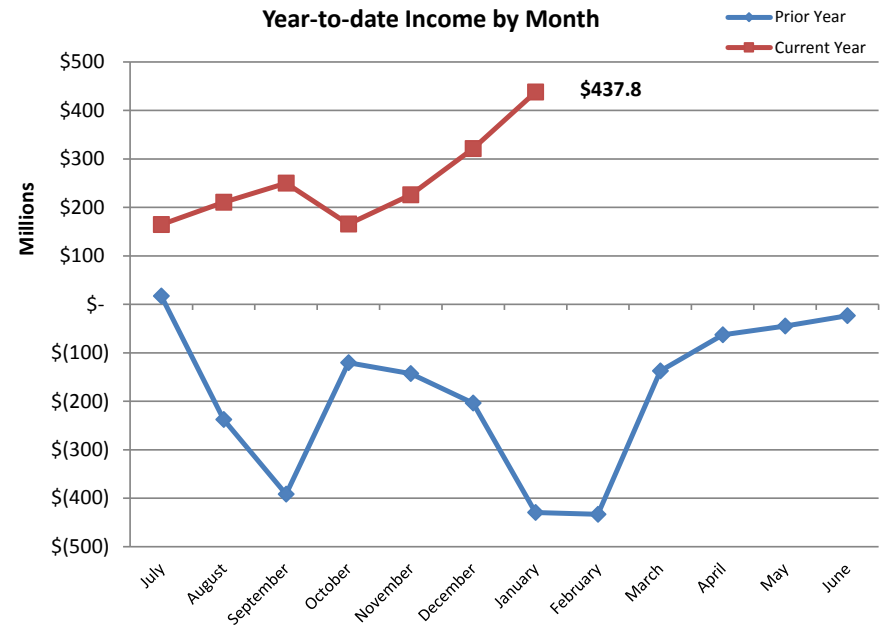
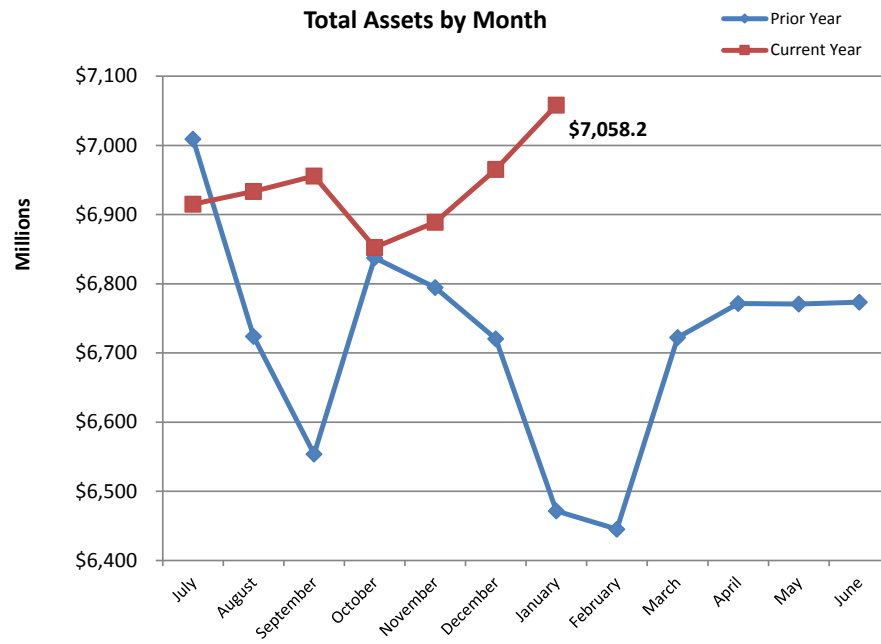


Actual Asset Allocation vs Target Allocation



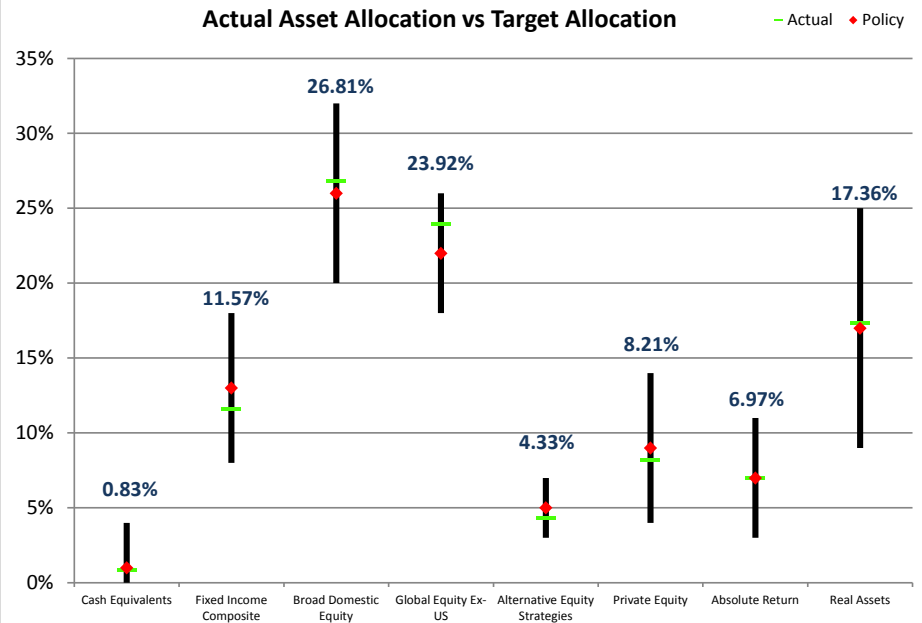
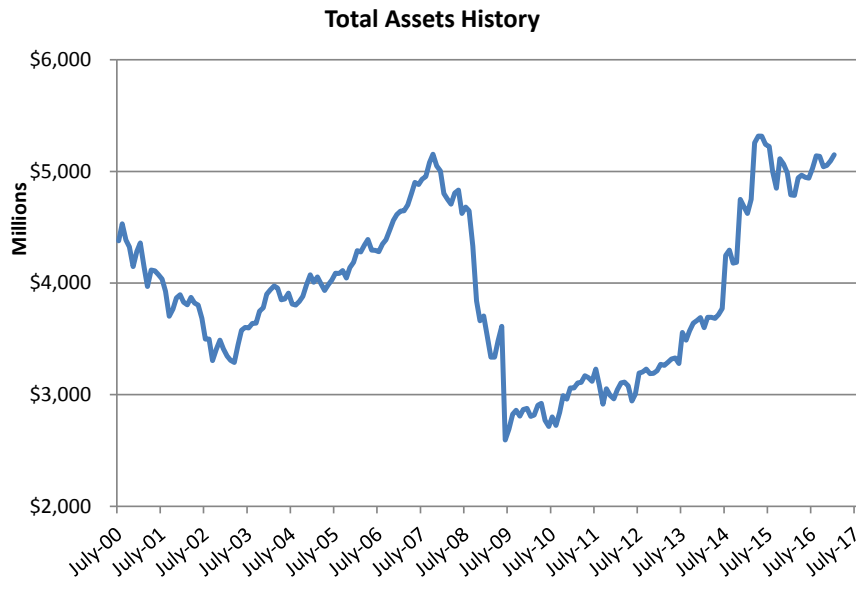
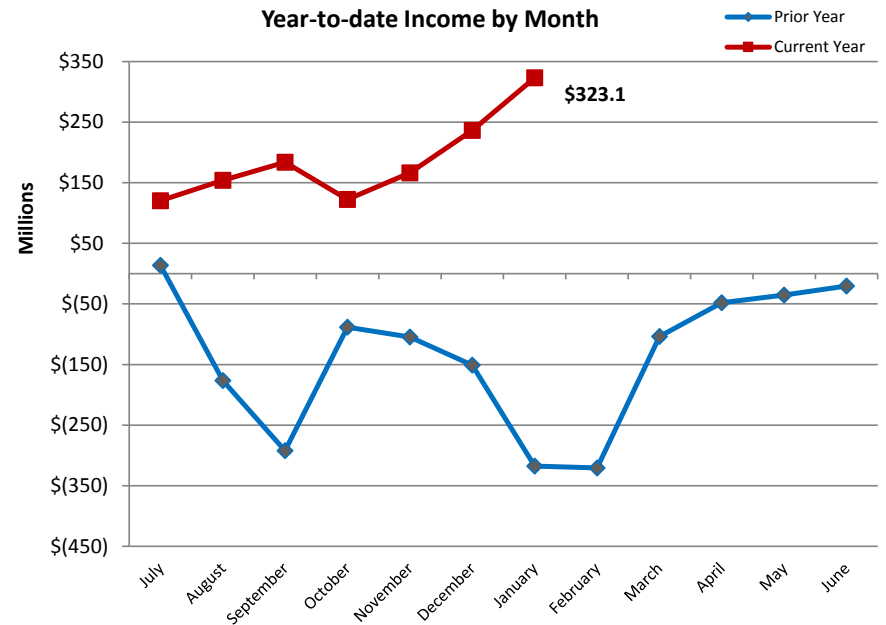
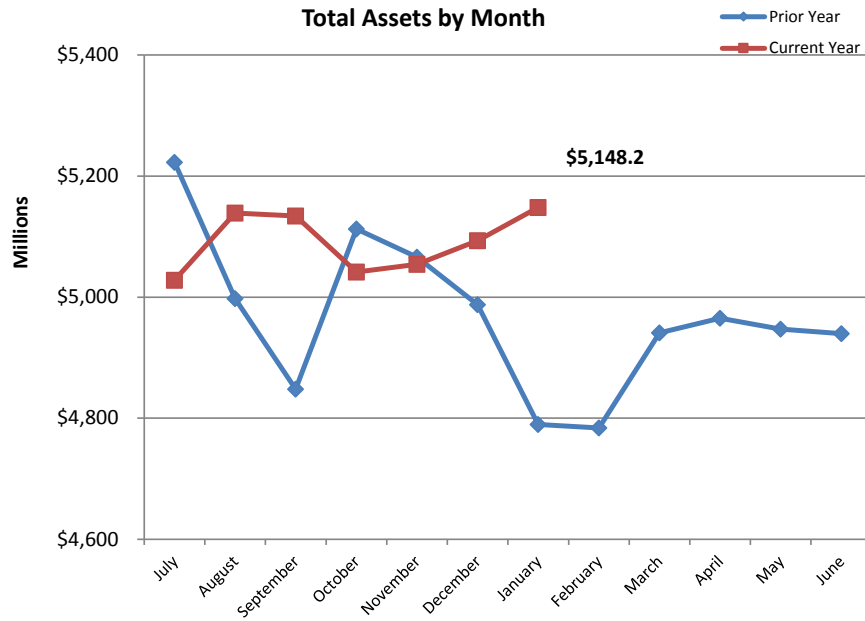
Public Employees' Retirement Health Care Trust Fund

Fiscal Year-to-Date through January 31, 2017



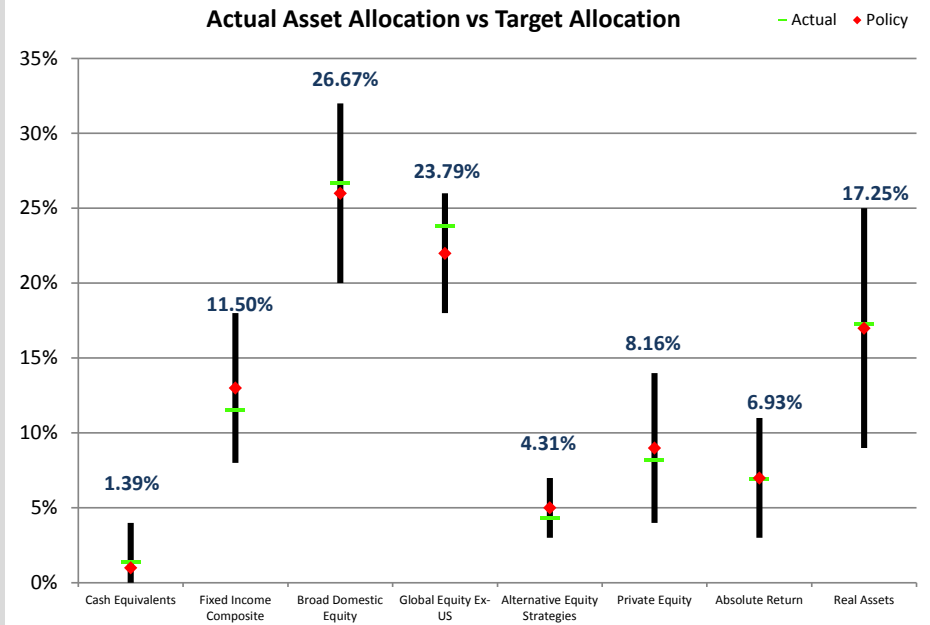
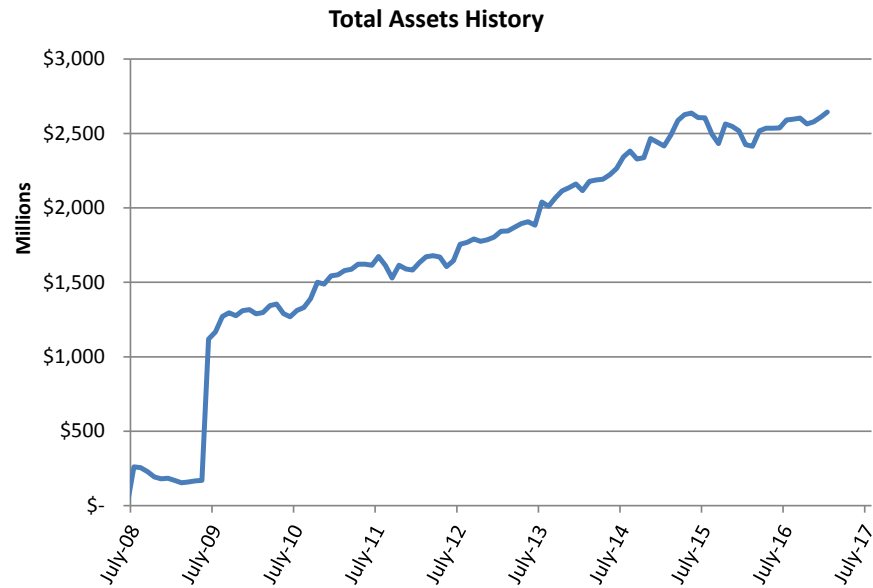
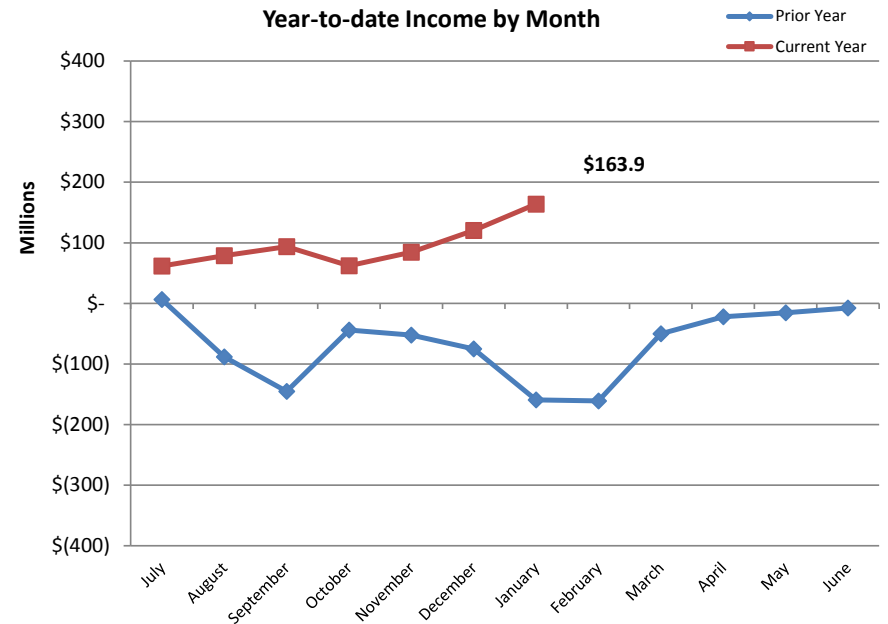
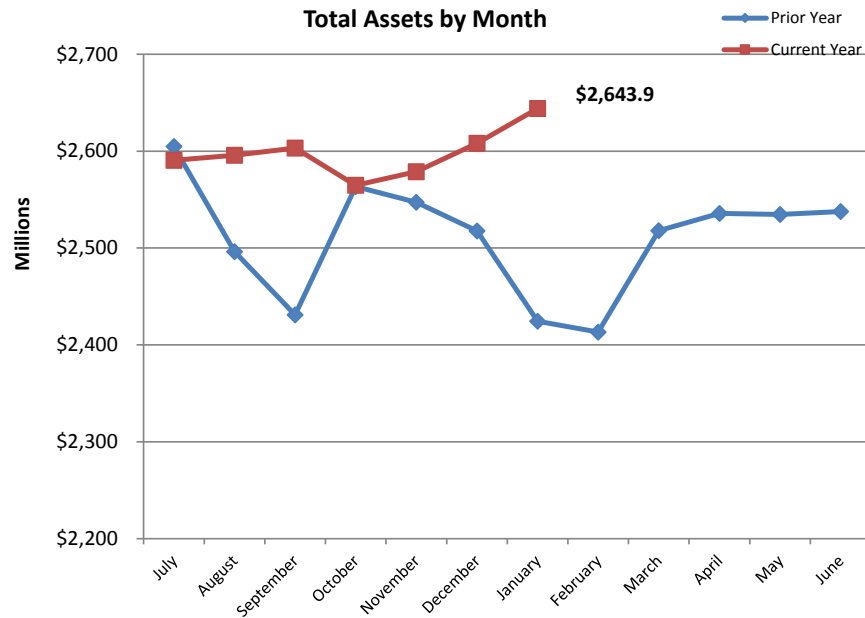
Teachers' Retirement Pension Trust Fund

Fiscal Year-to-Date through January 31, 2017



Teachers' Retirement Health Care Trust Fund

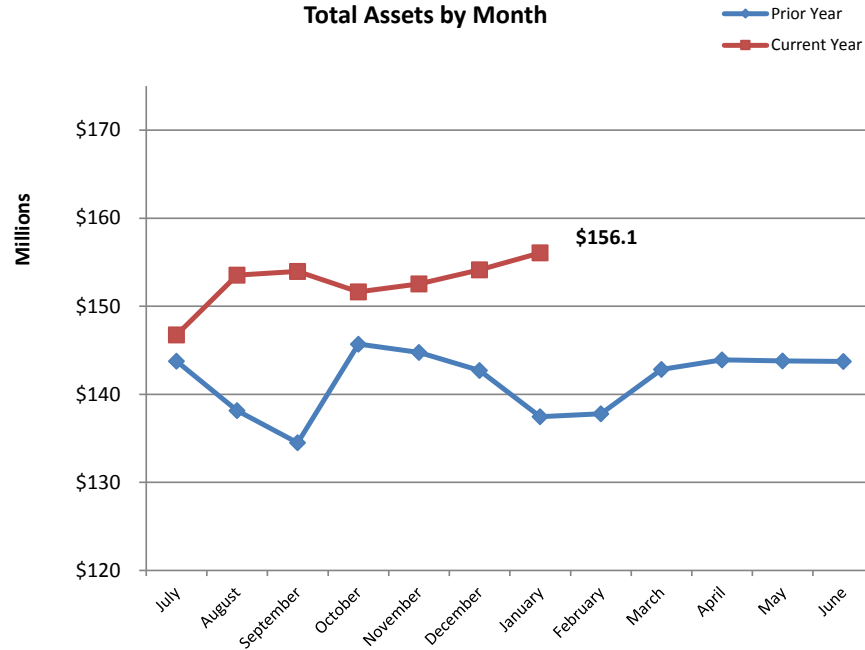
Fiscal Year-to-Date through January 31, 2017



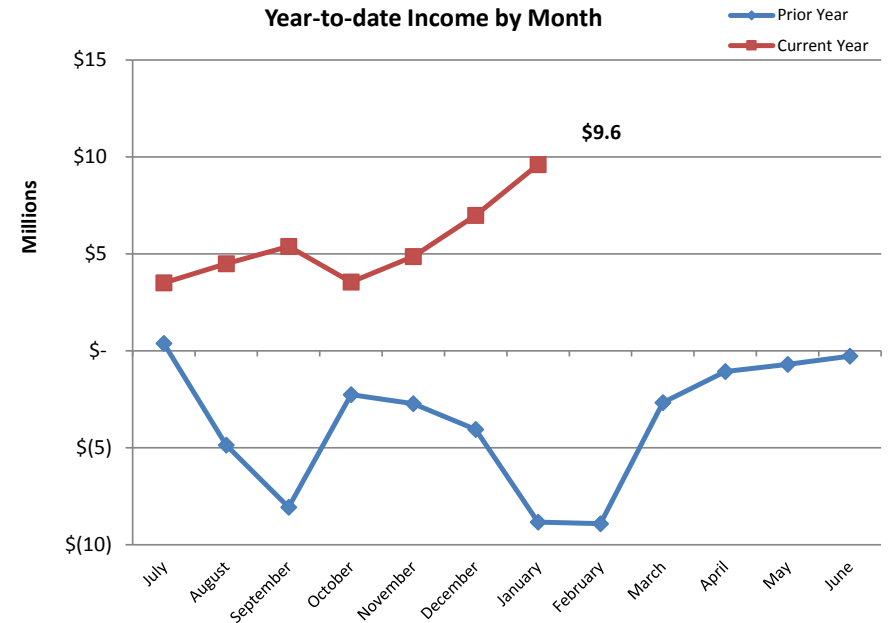
Judicial Retirement Pension Trust Fund

Fiscal Year-to-Date through January 31, 2017

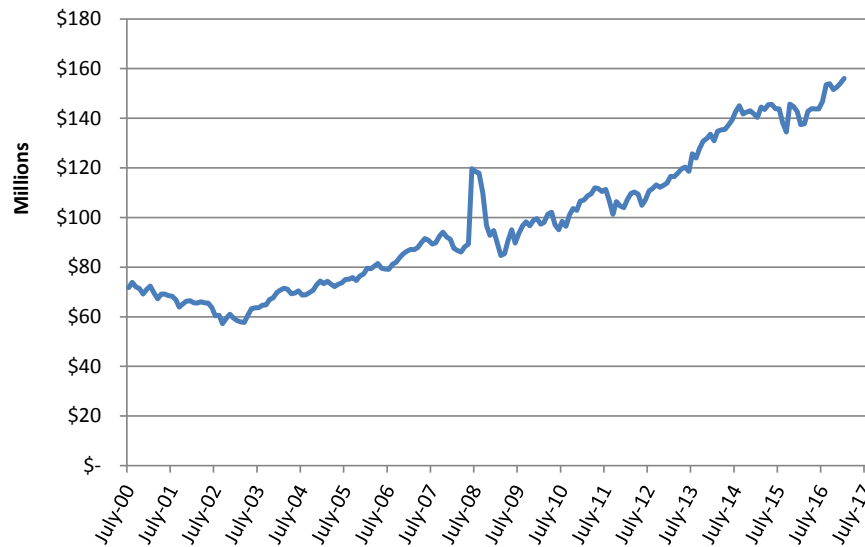
Total Assets by Month



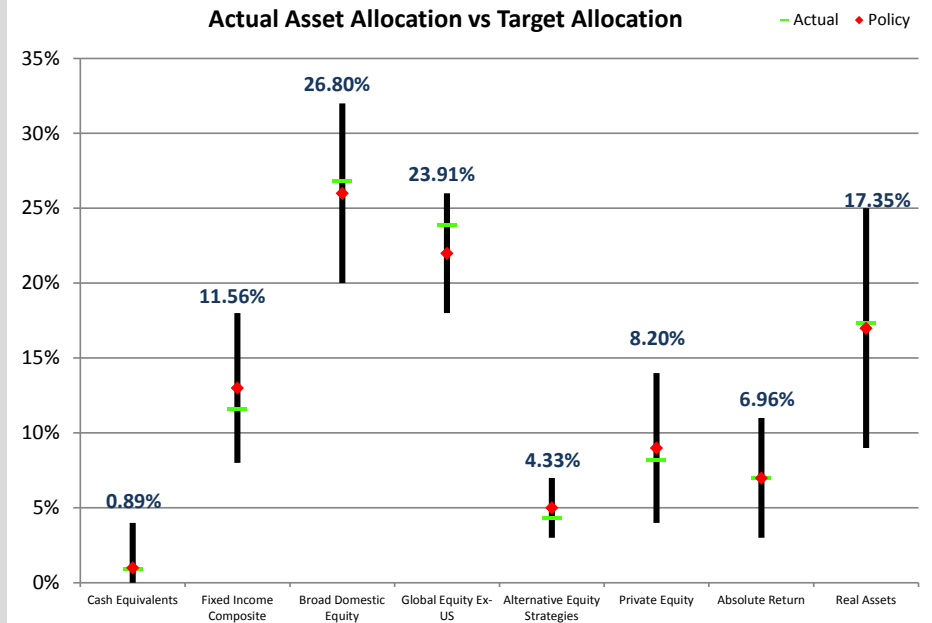
Year-to-date Income by Month



Total Assets History

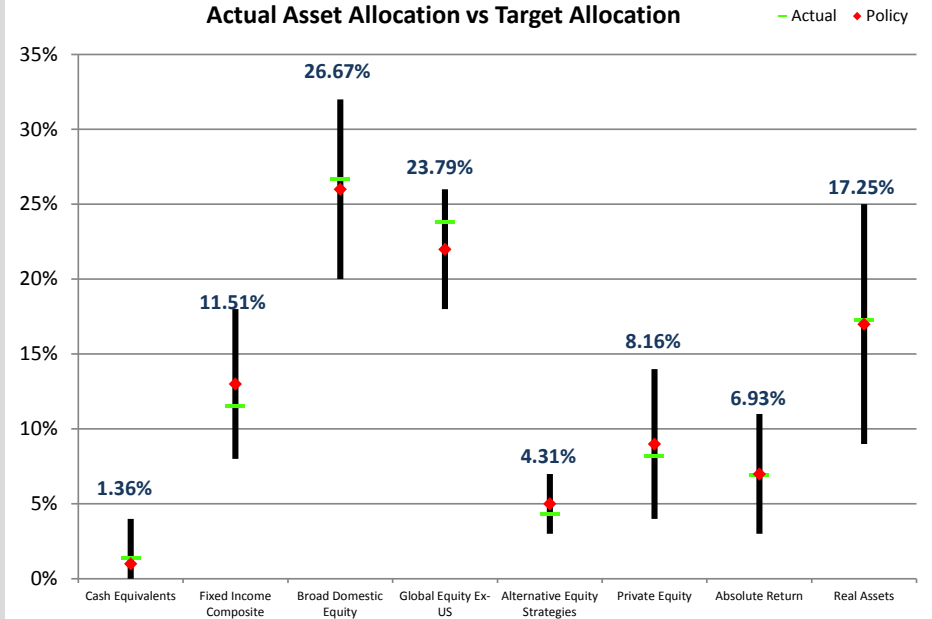
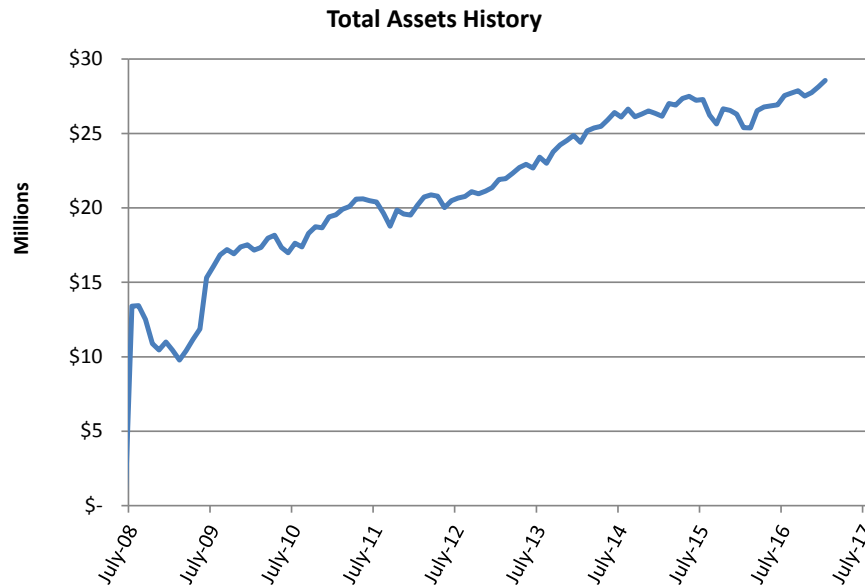
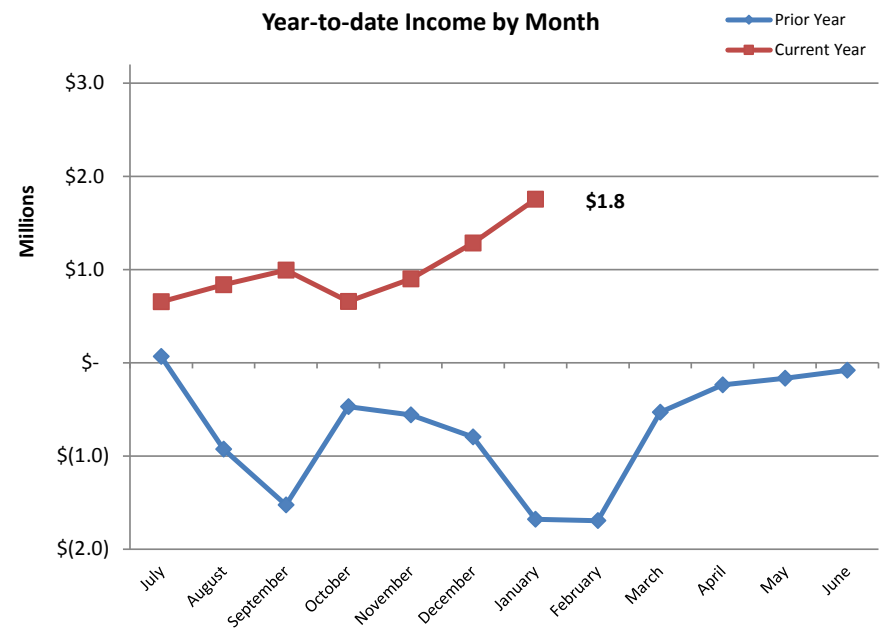
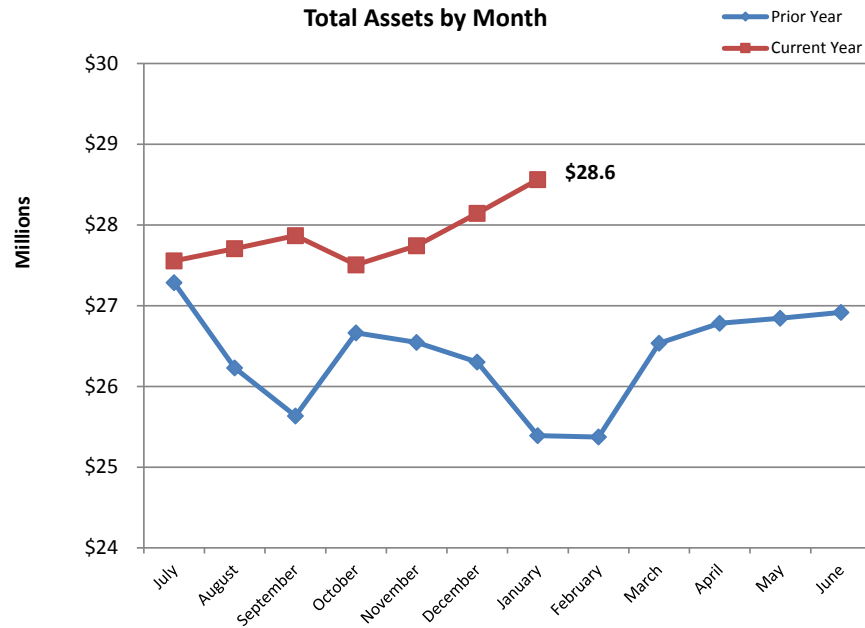


Actual Asset Allocation vs Target Allocation



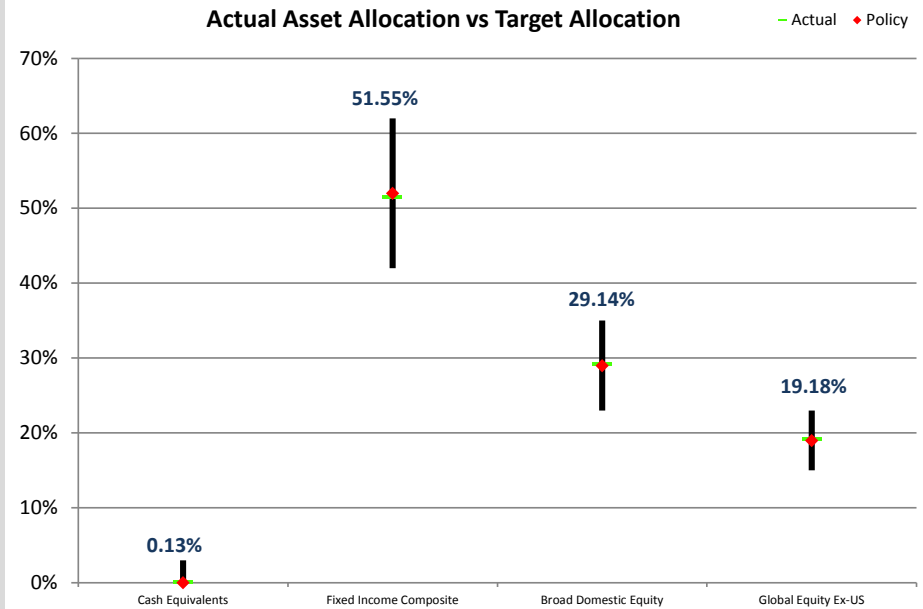
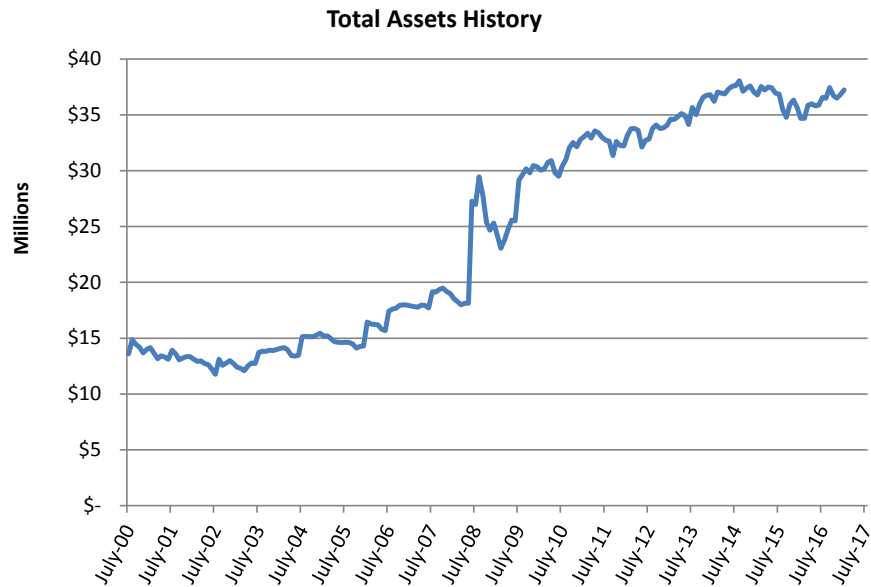
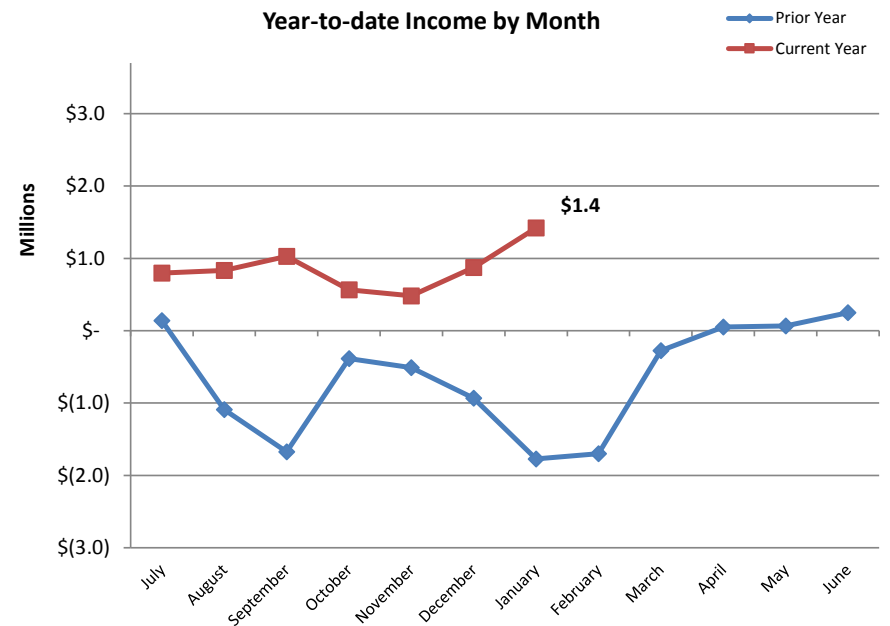
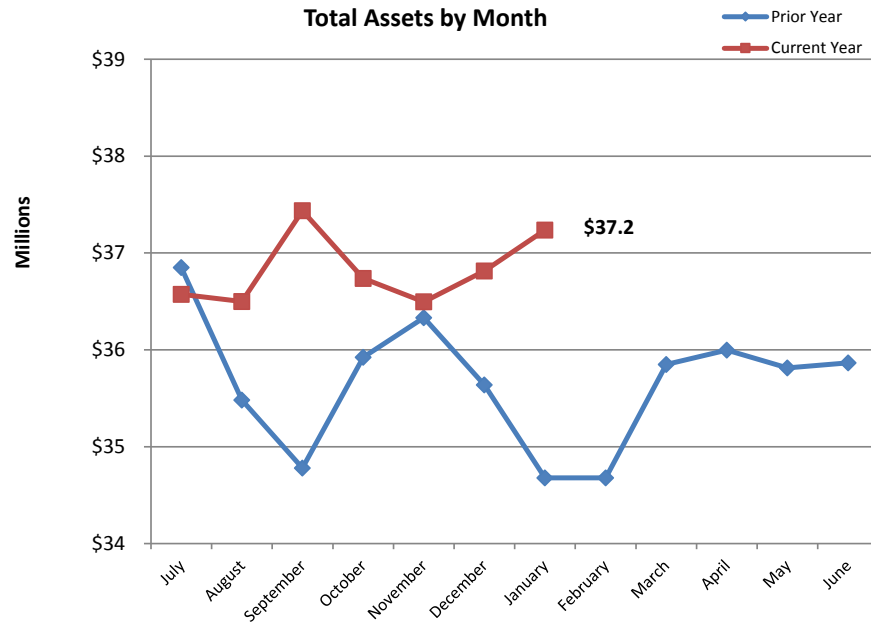
Judicial Retirement Health Care Trust Fund

Fiscal Year-to-Date through January 31, 2017



Military Retirement Trust Fund

Fiscal Year-to-Date through January 31, 2017



ALASKA RETIREMENT MANAGEMENT BOARD

Reporting of Funds by Manager

All Non-Participant Directed Plans

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended January 31, 2017

	Beginning Invested Assets	Investment Income	Net Contributions and (Withdrawals)	Ending Invested Assets	% increase (decrease)
Cash					
Short-Term Fixed Income Pool	\$ 292,946,294	\$ 209,509	\$ (38,994,762)	\$ 254,161,041	-13.24%
Total Cash	<u>292,946,294</u>	<u>209,509</u>	<u>(38,994,762)</u>	<u>254,161,041</u>	-13.24%
Fixed Income					
US Treasury Fixed Income	<u>1,047,045,119</u>	<u>2,178,355</u>	<u>(100,000)</u>	<u>1,049,123,474</u>	0.20%
Taxable Municipal Bond Pool					
Western Asset Management	126,832,788	712,882	(25,000,000)	102,545,670	-19.15%
Guggenheim Partners	<u>121,234,692</u>	<u>448,034</u>	<u>(25,000,000)</u>	<u>96,682,726</u>	-20.25%
	<u>248,067,480</u>	<u>1,160,916</u>	<u>(50,000,000)</u>	<u>199,228,396</u>	-19.69%
Alternative Fixed Income Pool					
Fidelity Institutional Asset Management.	130,846,119	1,082,061	-	131,928,180	0.83%
Schroders Innsurance Linked Securities	<u>61,088,855</u>	<u>168,516</u>	<u>-</u>	<u>61,257,371</u>	0.28%
	<u>191,934,974</u>	<u>1,250,577</u>	<u>-</u>	<u>193,185,551</u>	0.65%
International Fixed Income Pool					
Mondrian Investment Partners	<u>338,781,875</u>	<u>6,486,663</u>	<u>-</u>	<u>345,268,538</u>	1.91%
High Yield Pool					
MacKay Shields, LLC	239,173,651	3,002,095	-	242,175,746	1.26%
Fidelity Instit. Asset Mgmt. High Yield CMBS	203,096,333	2,780,547	-	205,876,880	1.37%
Columbia Threadneedle	225,914,114	2,192,210	-	228,106,324	0.97%
Eaton Vance High Yield	<u>224,325,608</u>	<u>2,404,370</u>	<u>-</u>	<u>226,729,978</u>	1.07%
	<u>892,509,706</u>	<u>10,379,222</u>	<u>-</u>	<u>902,888,928</u>	1.16%
Emerging Debt Pool					
Lazard Emerging Income	<u>108,520,086</u>	<u>1,753,910</u>	<u>-</u>	<u>110,273,996</u>	1.62%
Total Fixed Income	<u>2,826,859,240</u>	<u>23,209,643</u>	<u>(50,100,000)</u>	<u>2,799,968,883</u>	-0.95%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended January 31, 2017

Domestic Equities

Small Cap Pool

Passively Managed

SSgA Russell 2000 Growth	20,116,577	337,151	-	20,453,728	1.68%
SSgA Russell 2000 Value	38,771,283	(278,756)	-	38,492,527	-0.72%
Total Passive	58,887,860	58,395	-	58,946,255	0.10%

Actively Managed

Barrow, Haney, Mewhinney & Strauss	28,777,208	813,237	-	29,590,445	2.83%
DePrince, Race & Zollo Inc.- Micro Cap	102,594,243	(2,156,232)	-	100,438,011	-2.10%
Fidelity (FIAM) Small Company	133,197,020	1,622,552	-	134,819,572	1.22%
Frontier Capital Mgmt. Co.	77,598,964	(576,028)	-	77,022,936	-0.74%
Jennison Associates, LLC	92,512,630	2,619,158	-	95,131,788	2.83%
Lord Abbett Small Cap Growth Fund	47,921,971	1,936,540	-	49,858,511	4.04%
Lord Abbett & Co.- Micro Cap	85,228,448	2,155,405	-	87,383,853	2.53%
SSgA Futures Small Cap	13,566,494	38,845	-	13,605,339	0.29%
Transition Account	-	-	-	-	-
Sycamore Capital	139,866,495	(2,225,431)	-	137,641,064	-1.59%
S&P 600 Internally Managed	78,694,896	(37,477)	(56,500,000)	22,157,419	-71.84%
SSgA Volatility-Russell 2000	58,000,166	(1,028,239)	31,500,000	88,471,927	52.54%
Zebra Capital Management	93,004,902	(3,525,460)	-	89,479,442	-3.79%
BMO Global Asset Management	74,188,470	230,723	-	74,419,193	0.31%
Total Active	1,025,151,907	(132,407)	(25,000,000)	1,000,019,500	-2.45%
Total Small Cap	1,084,039,767	(74,012)	(25,000,000)	1,058,965,755	-2.31%

Large Cap Pool

Passively Managed

SSgA Russell 1000 Growth	1,027,356,932	34,475,374	-	1,061,832,306	3.36%
SSgA Russell 1000 Value	1,004,443,608	7,327,214	-	1,011,770,822	0.73%
SSgA Russell 200	881,598,776	16,277,359	-	897,876,135	1.85%
Total Passive	2,913,399,316	58,079,947	-	2,971,479,263	1.99%

Actively Managed

Allianz Global Investors	318,961,518	10,030,834	-	328,992,352	3.14%
Barrow, Haney, Mewhinney & Strauss	299,232,780	4,888,062	-	304,120,842	1.63%
Lazard Freres	387,878,423	7,294,569	-	395,172,992	1.88%
McKinley Capital Mgmt.	237,210,832	9,830,736	-	247,041,568	4.14%
Quantitative Management Assoc.	239,642,996	294,092	-	239,937,088	0.12%
SSgA Futures large cap	16,262,895	285,426	-	16,548,321	1.76%
Transition Account	1,618	4,736	-	6,354	292.71%
SSgA Volatility-Russell 1000	88,656,229	1,179,899	-	89,836,128	1.33%
Portable Alpha	439,391,251	8,209,925	22,000,000	469,601,176	6.88%
Internally Managed Large Cap.	332,426,661	2,405,984	-	334,832,645	0.72%
Total Active	2,359,665,203	44,424,263	22,000,000	2,426,089,466	2.81%
Total Large Cap	5,273,064,519	102,504,210	22,000,000	5,397,568,729	2.36%
Total Domestic Equity	6,357,104,286	102,430,198	(3,000,000)	6,456,534,484	1.56%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended January 31, 2017

Alternative Equity Strategies

Alternative Equity Strategy Pool

Relational Investors, LLC	1,080,855	-	-	1,080,855	-
Analytic Buy Write Account	316,395,573	6,329,425	-	322,724,998	2.00%
Quantitative Management Associates MPS	209,364,264	533,074	-	209,897,338	0.25%
ARMB Equity Yield Strategy	300,351,596	(885,007)	-	299,466,589	-0.29%
Alternative Equity Strategies Transition Account	-	-	-	-	-
Total Alternative Equity Strategy Pool	827,192,288	5,977,492	-	833,169,780	0.72%

Convertible Bond Pool

Advent Capital	205,421,721	3,424,802	-	208,846,523	1.67%
Total Alternative Equity Strategies	1,032,614,009	9,402,294	-	1,042,016,303	0.91%

Global Equities Ex US

Small Cap Pool

Mondrian Investment Partners	143,931,596	5,949,750	-	149,881,346	4.13%
Schroder Investment Management	157,442,086	5,427,425	-	162,869,511	3.45%
Total Small Cap	301,373,682	11,377,175	-	312,750,857	3.78%

Large Cap Pool

Blackrock ACWI Ex-US IMI	547,102,136	19,589,410	-	566,691,546	3.58%
Brandes Investment Partners	715,631,573	16,052,764	-	731,684,337	2.24%
Cap Guardian Trust Co	711,373,593	38,243,996	-	749,617,589	5.38%
Lazard Freres	343,123,934	6,635,022	-	349,758,956	1.93%
McKinley Capital Management	493,414,908	22,622,396	-	516,037,304	4.58%
SSgA Futures International	-	-	-	-	-
Allianz Global Investors	253,227,894	8,222,214	-	261,450,108	3.25%
Arrow Street Capital	305,505,093	16,179,180	-	321,684,273	5.30%
Baillie Gifford Overseas Limited	366,869,265	19,609,019	-	386,478,284	5.34%
State Street Global Advisors	806,167,203	28,763,891	-	834,931,094	3.57%
Total Large Cap	4,542,415,599	175,917,892	-	4,718,333,491	3.87%

Emerging Markets Equity Pool

Lazard Asset Management	451,064,755	22,327,140	-	473,391,895	4.95%
Eaton Vance	239,857,765	12,624,093	-	252,481,858	5.26%
Total Emerging Markets Pool	690,922,520	34,951,233	-	725,873,753	5.06%

Total Global Equities	5,534,711,801	222,246,300	-	5,756,958,101	4.02%
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Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended January 31, 2017

Private Equity Pool

Abbott Capital	796,141,531	51,780	4,316,906	800,510,217	0.55%
Angelo, Gordon & Co.	1,987,987	-	-	1,987,987	-
Advent International GPE Fund VIII-B	406,449	-	-	406,449	-
Lexington Partners VII	32,732,272	-	(1,106,717)	31,625,555	-3.38%
Merit Capital Partners	17,942,881	-	(253,342)	17,689,539	-1.41%
NB SOF III	26,340,903	-	-	26,340,903	-
NB SOF IV	-	-	-	-	-
Resolute Fund III	9,617,276	-	91,914	9,709,190	0.96%
Glendon Opportunities	27,206,019	-	-	27,206,019	-
New Mountain Partners IV	16,738,269	-	-	16,738,269	-
KKR Lending Partners II	63,255,885	-	-	63,255,885	-
NGP XI	24,902,202	-	-	24,902,202	-
Lexington Capital Partners VIII	11,715,369	-	-	11,715,369	-
Onex Partnership III	20,479,933	-	-	20,479,933	-
Pathway Capital Management LLC	847,712,245	109,030	6,748,332	854,569,607	0.81%
Summit Partners GE IX	-	-	-	-	-
Dyal Capital Partners III	9,134,495	(1)	1,571,770	10,706,264	17.21%
Warburg Pincus X	15,292,409	-	(381,540)	14,910,869	-2.49%
Warburg Pincus XI	29,192,766	-	120,000	29,312,766	0.41%
Warburg Pincus XII	10,712,842	-	-	10,712,842	-
Total Private Equity	<u>1,961,511,733</u>	<u>160,809</u>	<u>11,107,323</u>	<u>1,972,779,865</u>	0.57%

Absolute Return Pool

Global Asset Management (USA) Inc.	227,147,419	1,473,152	-	228,620,571	0.65%
Prisma Capital Partners	372,799,490	-	-	372,799,490	-
Crestline Investors, Inc.	387,032,321	-	11,252,736	398,285,057	2.91%
Allianz Global Investors	345,615,202	1,239,753	-	346,854,955	0.36%
Crestline Specialty Fund	27,813,884	-	-	27,813,884	-
KKR Apex Equity Fund	93,653,911	(1,288,000)	-	92,365,911	-1.38%
Zebra Global Equity Fund	131,034,219	3,149,245	-	134,183,464	2.40%
Zebra Global Equity Advantage Fund	71,301,583	2,868,188	-	74,169,771	4.02%
Total Absolute Return Investments	<u>1,656,398,029</u>	<u>7,442,338</u>	<u>11,252,736</u>	<u>1,675,093,103</u>	1.13%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended January 31, 2017

Real Assets

Farmland Pool

UBS Agrivest, LLC	556,866,051	-	-	556,866,051	-
Hancock Agricultural Investment Group	269,383,136	-	-	269,383,136	-
Total Farmland Pool	826,249,187	-	-	826,249,187	-

Timber Pool

Timberland Inv't Resource LLC	277,735,050	-	(11,200,000)	266,535,050	-4.03%
Hancock Natural Resource Group	97,010,811	-	-	97,010,811	-
Total Timber Pool	374,745,861	-	(11,200,000)	363,545,861	-2.99%

Energy Pool

EIG Energy Fund XV	28,567,036	-	-	28,567,036	-
EIG Energy Fund XD	396,395	-	-	396,395	-
EIG Energy Fund XIV-A	10,690,441	-	-	10,690,441	-
EIG Energy Fund XVI	37,395,357	-	(363,484)	37,031,873	-0.97%
Total Energy Pool	77,049,229	-	(363,484)	76,685,745	-0.47%

REIT Pool

REIT Trans Account	-	-	-	-	-
REIT Holdings	335,388,269	877,197	-	336,265,466	0.26%
Total REIT Pool	335,388,269	877,197	-	336,265,466	0.26%

Treasury Inflation Proof Securities

TIPS Internally Managed Account	54,754,814	460,369	-	55,215,183	0.84%
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Master Limited Partnerships

Advisory Research MLP	244,211,812	9,272,916	-	253,484,728	3.80%
Tortoise Capital Advisors	272,716,870	12,496,832	-	285,213,702	4.58%
Total Master Limited Partnerships	516,928,682	21,769,748	-	538,698,430	4.21%

Infrastructure Private Pool

IFM Global Infrastructure Fund-Private	223,093,351	5,489,530	-	228,582,881	2.46%
JP Morgan Infrastructure Fund-Private	100,597,293	-	-	100,597,293	-
Total Infrastructure Private Pool	323,690,644	5,489,530	-	329,180,174	1.70%

Infrastructure Public Pool

Brookfield Investment Mgmt.-Public	93,975,654	1,205,690	-	95,181,344	1.28%
Lazard Asset Mgmt.-Public	113,886,492	1,796,115	-	115,682,607	1.58%
Total Infrastructure Public Pool	207,862,146	3,001,805	-	210,863,951	1.44%

Alaska Retirement Management Board
All Non-Participant Directed Plans by Manager
Schedule of Investment Income and Changes in Invested Assets
For the Month Ended January 31, 2017

Real Estate					
Core Commingled Accounts					
JP Morgan	241,448,733	3,745,524	(2,119,943)	243,074,314	0.67%
UBS Trumbull Property Fund	98,277,167	1,173,494	24,253,883	123,704,544	25.87%
Total Core Commingled	339,725,900	4,919,018	22,133,940	366,778,858	7.96%
Core Separate Accounts					
LaSalle Investment Management	214,773,499	-	(1,054,829)	213,718,670	-0.49%
Sentinel Separate Account	217,389,237	-	(32,542,766)	184,846,471	-14.97%
UBS Realty	494,191,987	-	(505,031)	493,686,956	-0.10%
Total Core Separate	926,354,723	-	(34,102,626)	892,252,097	-3.68%
Non-Core Commingled Accounts					
Almanac Realty Securities IV	51,405	-	-	51,405	-
Almanac Realty Securities V	6,921,445	-	(1,372,527)	5,548,918	-19.83%
Almanac Realty Securities VII	17,125,327	-	956,828	18,082,155	5.59%
BlackRock Diamond Property Fund	-	290,613	-	290,613	100.00%
Clarion Ventures 4	41,850,937	-	-	41,850,937	-
Colony Investors VIII, L.P.	11,061,481	-	-	11,061,481	-
Cornerstone Apartment Venture III	44,542	-	-	44,542	-
Coventry	437,016	-	-	437,016	-
ING Clarion Development Ventures III	6,902,641	-	-	6,902,641	-
KKR Real Estate Partners Americas LP.	33,561,974	-	-	33,561,974	-
LaSalle Medical Office Fund II	196	-	-	196	-
Lowe Hospitality Partners	333,058	-	-	333,058	-
Silverpeak Legacy Pension Partners II, L.P.	11,544,914	-	-	11,544,914	-
Silverpeak Legacy Pension Partners III, L.P.	5,690,370	-	-	5,690,370	-
Tishman Speyer Real Estate Venture VI	34,111,227	-	-	34,111,227	-
Tishman Speyer Real Estate Venture VII	6,120,932	-	-	6,120,932	-
Total Non-Core Commingled	175,757,465	290,613	(415,699)	175,632,379	-0.07%
Total Real Estate	1,441,838,088	5,209,631	(12,384,385)	1,434,663,334	-0.50%
Total Real Assets	4,158,506,920	36,808,280	(23,947,869)	4,171,367,331	0.31%
Total Assets	\$ 23,820,652,312	\$ 401,909,371	\$ (93,682,572)	\$ 24,128,879,111	1.29%

ALASKA RETIREMENT MANAGEMENT BOARD

Reporting of Funds by Manager

Participant Directed Plans

Supplemental Annuity Plan
Schedule of Investment Income and Changes in Invested Assets
for the Month Ended
January 31, 2017

	<u>Beginning Invested Assets</u>	<u>Investment Income</u>	<u>Net Contributions (Withdrawals)</u>	<u>Transfers In (Out)</u>	<u>Ending Invested Assets</u>	<u>% Change in Invested Assets</u>	<u>% Change due to Investment Income (2)</u>
Participant Options							
T. Rowe Price							
Stable Value Fund	\$ 372,966,187	\$ 682,328	\$ (2,299,279)	\$ (3,232,210)	\$ 368,117,026	-1.30%	0.18%
Small Cap Stock Fund	149,590,078	1,973,191	(446,100)	517,863	151,635,032	1.37%	1.32%
Alaska Balanced Trust	1,144,419,572	11,790,886	(4,912,328)	300,929	1,151,599,059	0.63%	1.03%
Long Term Balanced Fund	555,012,463	8,778,980	(170,065)	660,940	564,282,318	1.67%	1.58%
AK Target Date 2010 Trust	9,552,407	114,349	(18,671)	(214,400)	9,433,685	-1.24%	1.21%
AK Target Date 2015 Trust	87,477,778	1,227,074	(692,681)	(619,606)	87,392,565	-0.10%	1.41%
AK Target Date 2020 Trust	80,608,891	1,305,805	41,988	(998,984)	80,957,700	0.43%	1.63%
AK Target Date 2025 Trust	55,484,155	1,006,514	235,107	205,617	56,931,393	2.61%	1.81%
AK Target Date 2030 Trust	41,608,255	828,411	317,276	263,533	43,017,475	3.39%	1.98%
AK Target Date 2035 Trust	38,350,355	814,504	106,253	(70,207)	39,200,905	2.22%	2.12%
AK Target Date 2040 Trust	38,336,578	857,729	147,307	455,564	39,797,178	3.81%	2.22%
AK Target Date 2045 Trust	42,208,100	954,023	177,439	(262,729)	43,076,833	2.06%	2.26%
AK Target Date 2050 Trust	47,358,011	1,071,233	344,655	177,513	48,951,412	3.36%	2.25%
AK Target Date 2055 Trust	36,413,854	824,039	306,690	44,936	37,589,519	3.23%	2.25%
AK Target Date 2060 Trust	231,283	5,436	675	41,383	278,777	20.54%	2.15%
Total Investments with T. Rowe Price	<u>2,699,617,967</u>	<u>32,234,502</u>	<u>(6,861,734)</u>	<u>(2,729,858)</u>	<u>2,722,260,877</u>		
State Street Global Advisors							
State Street Treasury Money Market Fund - Inst.	41,610,705	14,629	(241,789)	1,357,879	42,741,424	2.72%	0.03%
S&P 500 Stock Index Fund Series A	371,956,575	7,038,407	(886,442)	196,157	378,304,697	1.71%	1.89%
Russell 3000 Index	66,990,741	1,247,743	(57,084)	(655,319)	67,526,081	0.80%	1.87%
US Real Estate Investment Trust Index	43,402,483	(405,872)	(95,218)	229,632	43,131,025	-0.63%	-0.93%
World Equity Ex-US Index	28,650,851	1,028,337	(56,474)	500,239	30,122,953	5.14%	3.56%
Long US Treasury Bond Index	16,846,918	62,439	(85,613)	300,482	17,124,226	1.65%	0.37%
US Treasury Inflation Protected Securities Index	23,285,188	194,751	(122,962)	271,864	23,628,841	1.48%	0.83%
World Government Bond Ex-US Index	7,101,523	118,486	(46,502)	(200,324)	6,973,183	-1.81%	1.70%
Global Balanced Fund	54,141,662	995,099	(252,489)	194,509	55,078,781	1.73%	1.84%
Total Investments with SSGA	<u>653,986,646</u>	<u>10,294,019</u>	<u>(1,844,573)</u>	<u>2,195,119</u>	<u>664,631,211</u>		
BlackRock							
Government/Credit Bond Fund	39,170,002	108,616	(69,358)	(56,214)	39,153,046	-0.04%	0.28%
Intermediate Bond Fund	32,436,843	64,338	(229,007)	1,076,888	33,349,062	2.81%	0.20%
Total Investments with Barclays Global Investors	<u>71,606,845</u>	<u>172,954</u>	<u>(298,365)</u>	<u>1,020,674</u>	<u>72,502,108</u>		
Brandes/Allianz (3)							
AK International Equity Fund	59,479,862	1,812,433	(643,227)	(840,097)	59,808,971	0.55%	3.09%
RCM							
Sustainable Core Opportunities Fund	38,398,420	997,614	(103,615)	354,162	39,646,581	3.25%	2.59%
Total All Funds	<u>\$ 3,523,089,740</u>	<u>\$ 45,511,522</u>	<u>\$ (9,751,514)</u>	<u>\$ -</u>	<u>\$ 3,558,849,748</u>	1.02%	1.29%

Notes: Source data provided by the record keeper, Great West Life. (1) Represents net contributions in transit to/from the record keeper.

(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.

(3) This investment is comprised of two funds, Brandes International Equity Fund and Allianz NFJ International Fund effective March 30, 2015.

Supplemental Annuity Plan
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
January 31, 2017
\$ (Thousands)

<u>Invested Assets</u> (at fair value)	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>
Investments with T. Rowe Price							
Stable Value Fund	\$ 376,543	\$ 373,305	\$ 376,379	\$ 379,815	\$ 380,007	\$ 372,966	\$ 368,117
Small Cap Stock Fund	128,981	131,621	131,789	125,799	142,649	149,590	151,635
Alaska Balanced Trust	1,173,354	1,167,198	1,164,532	1,151,484	1,141,515	1,144,420	1,151,599
Long Term Balanced Fund	548,289	548,555	548,939	543,446	548,169	555,012	564,282
AK Target Date 2010 Trust	9,976	10,012	10,366	10,362	10,461	9,552	9,434
AK Target Date 2015 Trust	90,467	89,013	88,031	86,598	86,694	87,478	87,393
AK Target Date 2020 Trust	78,030	77,667	78,641	77,615	79,689	80,609	80,958
AK Target Date 2025 Trust	51,632	51,790	52,376	51,977	52,956	55,484	56,931
AK Target Date 2030 Trust	38,154	38,809	38,947	39,037	40,150	41,608	43,017
AK Target Date 2035 Trust	35,727	35,875	36,294	36,574	37,954	38,350	39,201
AK Target Date 2040 Trust	35,051	35,401	35,716	36,082	37,058	38,337	39,797
AK Target Date 2045 Trust	38,002	38,321	38,670	38,741	40,697	42,208	43,077
AK Target Date 2050 Trust	43,080	43,355	44,203	44,213	45,859	47,358	48,951
AK Target Date 2055 Trust	32,450	32,932	33,820	34,014	35,352	36,414	37,590
AK Target Date 2060 Trust	116	112	115	114	182	231	279
State Street Global Advisors							
State Street Treasury Money Market Fund - Inst.	39,523	38,279	38,739	40,846	41,718	41,611	42,741
S&P 500 Stock Index Fund Series A	348,876	350,812	349,621	343,289	359,690	371,957	378,305
Russell 3000 Index	70,910	68,574	66,830	63,869	66,689	66,991	67,526
US Real Estate Investment Trust Index	49,651	49,140	49,189	43,984	40,967	43,402	43,131
World Equity Ex-US Index	28,316	27,211	26,910	27,551	26,950	28,651	30,123
Long US Treasury Bond Index	28,731	29,447	27,978	24,553	20,360	16,847	17,124
US Treasury Inflation Protected Securities Index	22,342	22,450	22,886	23,460	23,163	23,285	23,629
World Government Bond Ex-US Index	8,979	8,896	8,860	8,068	7,139	7,102	6,973
Global Balanced Fund	53,169	53,749	54,101	53,381	53,165	54,142	55,079
Investments with BlackRock							
Government/Credit Bond Fund	42,821	42,464	41,482	41,102	39,852	39,170	39,153
Intermediate Bond Fund	31,560	32,277	32,853	33,009	32,280	32,437	33,349
Investments with Brandes/Allianz Institutional							
AK International Equity Fund	58,730	60,653	61,754	61,073	58,748	59,480	59,809
Investments with RCM							
Sustainable Core Opportunities Fund	40,377	39,498	39,019	37,121	37,513	38,398	39,647
Total Invested Assets	\$ 3,503,837	\$ 3,497,417	\$ 3,499,041	\$ 3,457,178	\$ 3,487,626	\$ 3,523,090	\$ 3,558,850
Change in Invested Assets							
Beginning Assets	\$ 3,419,490	\$ 3,503,837	\$ 3,497,417	\$ 3,499,041	\$ 3,457,178	\$ 3,487,626	\$ 3,523,090
Investment Earnings	77,719	5,163	6,144	(44,468)	31,775	38,615	45,512
Net Contributions (Withdrawals)	6,629	(11,583)	(4,521)	2,605	(1,327)	(3,151)	(9,752)
Ending Invested Assets	\$ 3,503,837	\$ 3,497,417	\$ 3,499,041	\$ 3,457,178	\$ 3,487,626	\$ 3,523,090	\$ 3,558,850

Deferred Compensation Plan
Schedule of Invested Assets and Changes in Invested Assets
for the Month Ended
January 31, 2017

	<u>Beginning Invested Assets</u>	<u>Investment Income</u>	<u>Net Contributions (Withdrawals)</u>	<u>Transfers In (Out)</u>	<u>Ending Invested Assets</u>	<u>% Change in Invested Assets</u>	<u>% Change due to Investment Income (1)</u>
Participant Options							
T. Rowe Price							
Interest Income Fund	\$ 182,518,506	\$ 354,870	\$ (1,010,608)	\$ 2,398,218	\$ 184,260,986	0.95%	0.19%
Small Cap Stock Fund	100,407,880	1,330,112	(187,795)	(639,899)	100,910,298	0.50%	1.33%
Alaska Balanced Trust	23,566,918	243,208	(116,860)	232,514	23,925,780	1.52%	1.03%
Long Term Balanced Fund	47,948,014	757,273	(210,980)	(43,639)	48,450,668	1.05%	1.58%
AK Target Date 2010 Trust	3,532,222	42,147	(44,649)	(40,114)	3,489,606	-1.21%	1.21%
AK Target Date 2015 Trust	9,249,428	129,469	(61,020)	40,412	9,358,289	1.18%	1.40%
AK Target Date 2020 Trust	20,037,652	323,912	41,287	(386,493)	20,016,358	-0.11%	1.63%
AK Target Date 2025 Trust	11,597,846	207,352	107,822	(343,113)	11,569,907	-0.24%	1.81%
AK Target Date 2030 Trust	8,467,080	162,767	18,411	(618,531)	8,029,727	-5.17%	1.99%
AK Target Date 2035 Trust	4,930,209	104,925	41,662	7,173	5,083,969	3.12%	2.12%
AK Target Date 2040 Trust	5,104,042	113,658	3,347	(40,917)	5,180,130	1.49%	2.24%
AK Target Date 2045 Trust	3,764,134	85,527	48,722	(28,340)	3,870,043	2.81%	2.27%
AK Target Date 2050 Trust	2,286,249	51,473	(6,894)	248,142	2,578,970	12.80%	2.14%
AK Target Date 2055 Trust	2,895,998	65,651	21,934	3,825	2,987,408	3.16%	2.26%
AK Target Date 2060 Trust	253,114	4,048	884	(168,824)	89,222	-64.75%	2.39%
Total Investments with T. Rowe Price	<u>426,559,292</u>	<u>3,976,392</u>	<u>(1,354,737)</u>	<u>620,414</u>	<u>429,801,361</u>		
State Street Global Advisors							
State Street Treasury Money Market Fund - Inst.	13,043,887	4,529	(271,355)	260,916	13,037,977	-0.05%	0.03%
Russell 3000 Index	31,167,188	586,606	4,182	543,625	32,301,601	3.64%	1.87%
US Real Estate Investment Trust Index	16,249,607	(142,686)	(35,868)	(854,884)	15,216,169	-6.36%	-0.90%
World Equity Ex-US Index	9,908,434	350,769	20,389	241,348	10,520,940	6.18%	3.49%
Long US Treasury Bond Index	6,028,068	22,919	(5,316)	778,116	6,823,787	13.20%	0.36%
US Treasury Inflation Protected Securities Index	9,445,514	79,166	(28,590)	124,370	9,620,460	1.85%	0.83%
World Government Bond Ex-US Index	2,791,544	41,608	(3,603)	(7,170)	2,822,379	1.10%	1.49%
Global Balanced Fund	<u>37,308,461</u>	<u>682,738</u>	<u>(137,837)</u>	<u>(323,237)</u>	<u>37,530,125</u>	<u>0.59%</u>	<u>1.84%</u>
Total Investments with SSGA	<u>125,942,703</u>	<u>1,625,649</u>	<u>(457,998)</u>	<u>763,084</u>	<u>127,873,438</u>		
BlackRock							
S&P 500 Index Fund	189,901,815	3,607,471	(488,778)	(655,401)	192,365,107	1.30%	1.91%
Government/Credit Bond Fund	25,701,261	70,972	(75,978)	(194,441)	25,501,814	-0.78%	0.28%
Intermediate Bond Fund	<u>19,669,069</u>	<u>38,654</u>	<u>(69,491)</u>	<u>230,322</u>	<u>19,868,554</u>	<u>1.01%</u>	<u>0.20%</u>
Total Investments with Barclays Global Investors	<u>235,272,145</u>	<u>3,717,097</u>	<u>(634,247)</u>	<u>(619,520)</u>	<u>237,735,475</u>		
Brandes/Allianz (2)							
AK International Equity Fund	34,951,945	1,055,301	(67,360)	(647,283)	35,292,603	0.97%	3.05%
RCM							
Sustainable Core Opportunities Fund	16,635,367	432,777	(96,886)	(116,695)	16,854,563	1.32%	2.62%
Total All Funds	<u>\$ 839,361,452</u>	<u>\$ 10,807,216</u>	<u>\$ (2,611,228)</u>	<u>\$ -</u>	<u>\$ 847,557,440</u>	<u>0.98%</u>	<u>1.29%</u>

Notes: Source data provided by the record keeper, Great West Life.

(1) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.

(2) This investment is comprised of two funds, 50% Brandes International equity Fund and 50% Allianz NFJ International Fund effective March 30, 2015.

Deferred Compensation Plan
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
January 31, 2017
\$ (Thousands)

<u>Invested Assets</u> (at fair value)	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>
Investments with T. Rowe Price							
Interest Income Fund							
Cash and cash equivalents	\$ 7,197	\$ 6,432	\$ 7,076	\$ 7,524	\$ 5,779	\$ 11,382	\$ 12,701
Synthetic Investment Contracts	176,609	176,781	177,152	177,958	177,650	171,136	171,560
Small Cap Stock Fund	91,928	93,241	92,738	88,964	97,900	100,408	100,910
Alaska Balanced Trust	22,932	23,002	23,321	23,570	23,600	23,567	23,926
Long Term Balanced Fund	48,902	48,607	48,083	47,584	47,534	47,948	48,451
AK Target Date 2010 Trust	3,469	3,389	3,672	3,599	3,765	3,532	3,490
AK Target Date 2015 Trust	9,656	9,413	9,229	9,196	9,087	9,249	9,358
AK Target Date 2020 Trust	18,790	19,034	19,312	18,872	19,481	20,038	20,016
AK Target Date 2025 Trust	10,182	10,572	11,102	10,796	11,085	11,598	11,570
AK Target Date 2030 Trust	6,994	7,013	7,124	7,403	8,373	8,467	8,030
AK Target Date 2035 Trust	4,227	4,271	4,447	4,439	4,651	4,930	5,084
AK Target Date 2040 Trust	4,656	4,849	4,883	4,767	4,889	5,104	5,180
AK Target Date 2045 Trust	3,166	3,237	3,269	3,251	3,514	3,764	3,870
AK Target Date 2050 Trust	2,077	2,088	2,130	2,094	2,221	2,286	2,579
AK Target Date 2055 Trust	3,307	3,264	3,291	3,224	3,319	2,896	2,987
AK Target Date 2060 Trust	82	89	91	90	246	253	89
State Street Global Advisors							
State Street Treasury Money Market Fund - Inst.	11,620	11,143	12,015	12,098	13,591	13,044	13,038
Russell 3000 Index	29,474	29,617	29,161	28,712	31,041	31,167	32,302
US Real Estate Investment Trust Index	17,592	16,625	16,450	15,403	15,011	16,250	15,216
World Equity Ex-US Index	9,475	9,675	9,703	9,214	9,133	9,908	10,521
Long US Treasury Bond Index	10,409	10,278	9,939	8,963	7,061	6,028	6,824
US Treasury Inflation Protected Securities Index	9,423	9,275	9,511	9,601	9,545	9,446	9,620
World Government Bond Ex-US Index	3,793	3,670	3,627	3,464	2,919	2,792	2,822
Global Balanced Fund	37,942	37,904	38,056	37,520	37,248	37,308	37,530
Investments with BlackRock							
S&P 500 Index Fund	184,379	184,364	183,196	178,983	185,798	189,902	192,365
Government/Credit Bond Fund	27,541	26,915	26,728	26,608	25,693	25,701	25,502
Intermediate Bond Fund	20,511	20,567	20,403	20,366	19,814	19,669	19,869
Investments with Brandes/Allianz							
AK International Equity Fund	35,708	35,932	35,984	35,409	34,480	34,952	35,293
Investments with RCM							
Sustainable Opportunities Fund	17,305	17,205	17,044	16,480	16,795	16,635	16,855
Total Invested Assets	\$ 829,346	\$ 828,452	\$ 828,735	\$ 816,153	\$ 831,224	\$ 839,361	\$ 847,557
<u>Change in Invested Assets</u>							
Beginning Assets	\$ 808,795	\$ 829,346	\$ 828,452	\$ 828,735	\$ 816,153	\$ 831,224	\$ 839,361
Investment Earnings	20,447	2,062	602	(12,170)	15,213	10,544	10,807
Net Contributions (Withdrawals)	104	(2,955)	(320)	(411)	(142)	(2,407)	(2,611)
Ending Invested Assets	\$ 829,346	\$ 828,452	\$ 828,735	\$ 816,153	\$ 831,224	\$ 839,361	\$ 847,557

Defined Contribution Retirement - Participant Directed PERS
Schedule of Investment Income and Changes in Invested Assets
for the Month Ended
January 31, 2017

	<u>Beginning Invested Assets</u>	<u>Investment Income</u>	<u>Net Contributions (Withdrawals)</u>	<u>Transfers In (Out)</u>	<u>Ending Invested Assets</u>	<u>% Change in Invested Assets</u>	<u>% Change due to Investment Income (2)</u>
Participant Options							
T. Rowe Price							
Alaska Money Market	\$ 8,998,223	\$ 4,554	\$ (76,162)	\$ (79,174)	\$ 8,847,441	-1.68%	0.05%
Small Cap Stock Fund	64,878,885	856,965	265,230	(1,206,203)	64,794,877	-0.13%	1.33%
Alaska Balanced Trust	13,202,388	136,276	33,439	18,118	13,390,221	1.42%	1.03%
Long Term Balanced Fund	8,361,283	132,412	25,837	(55,114)	8,464,418	1.23%	1.59%
AK Target Date 2010 Trust	2,072,829	25,034	18,613	12,558	2,129,034	2.71%	1.20%
AK Target Date 2015 Trust	9,367,484	132,499	161,016	27,337	9,688,336	3.43%	1.40%
AK Target Date 2020 Trust	23,651,020	385,262	275,682	(32,384)	24,279,580	2.66%	1.62%
AK Target Date 2025 Trust	35,189,196	641,012	656,927	37,907	36,525,042	3.80%	1.80%
AK Target Date 2030 Trust	36,819,062	733,591	516,944	(85,671)	37,983,926	3.16%	1.98%
AK Target Date 2035 Trust	43,188,349	919,534	622,217	(2,226)	44,727,874	3.56%	2.11%
AK Target Date 2040 Trust	51,055,376	1,143,728	748,237	59,502	53,006,843	3.82%	2.22%
AK Target Date 2045 Trust	63,956,069	1,451,658	971,082	(309,929)	66,068,880	3.30%	2.26%
AK Target Date 2050 Trust	76,028,633	1,724,411	1,096,134	(66,351)	78,782,827	3.62%	2.25%
AK Target Date 2055 Trust	52,778,442	1,200,481	1,300,914	(40,054)	55,239,783	4.66%	2.25%
AK Target Date 2060 Trust	87,584	1,987	2,658	(2)	92,227	5.30%	2.23%
Total Investments with T. Rowe Price	<u>489,634,823</u>	<u>9,489,404</u>	<u>6,618,768</u>	<u>(1,721,686)</u>	<u>504,021,309</u>		
State Street Global Advisors							
Money Market	4,033,353	1,434	(83,478)	156,601	4,107,910	1.85%	0.04%
S&P 500 Stock Index Fund Series A	68,993,221	1,311,105	354,187	708,332	71,366,845	3.44%	1.89%
Russell 3000 Index	22,240,115	407,841	19,402	(1,583,969)	21,083,389	-5.20%	1.90%
US Real Estate Investment Trust Index	16,444,812	(148,037)	86,670	98,671	16,482,116	0.23%	-0.90%
World Equity Ex-US Index	32,338,030	1,140,793	171,569	95,670	33,746,062	4.35%	3.51%
Long US Treasury Bond Index	1,203,138	5,582	(17,535)	(8,703)	1,182,482	-1.72%	0.47%
US Treasury Inflation Protected Securities Index	11,118,714	93,926	15,454	308,572	11,536,666	3.76%	0.83%
World Government Bond Ex-US Index	6,011,481	94,165	1,789	228,952	6,336,387	5.40%	1.54%
Global Balanced Fund	11,143,796	209,182	10,827	599,158	11,962,963	7.35%	1.83%
Total Investments with SSGA	<u>173,526,660</u>	<u>3,115,991</u>	<u>558,885</u>	<u>603,284</u>	<u>177,804,820</u>		
BlackRock							
Government/Credit Bond Fund	29,214,721	79,526	35,938	532,389	29,862,574	2.22%	0.27%
Intermediate Bond Fund	15,868,455	32,024	19,975	810,001	16,730,455	5.43%	0.20%
Total Investments with Barclays Global Investors	<u>45,083,176</u>	<u>111,550</u>	<u>55,913</u>	<u>1,342,390</u>	<u>46,593,029</u>		
Brandes/Allianz (3)							
AK International Equity Fund	38,420,215	1,174,285	205,724	(242,509)	39,557,715	2.96%	3.06%
RCM							
Sustainable Core Opportunities Fund	3,173,811	82,776	15,634	18,521	3,290,742	3.68%	2.59%
Total All Funds	<u>\$ 749,838,685</u>	<u>\$ 13,974,006</u>	<u>\$ 7,454,924</u>	<u>\$ -</u>	<u>\$ 771,267,615</u>	2.86%	1.85%

Notes: Source data provided by the record keeper, Great West Life. (1) Represents net contributions in transit to/from the record keeper.
(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.
(3) This investment is comprised of two funds, 50% Brandes International Equity Fund and 50% Allianz NFJ International Fund effective March 30, 2015.

Defined Contribution Retirement - Participant Directed PERS
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
January 31, 2017
\$ (Thousands)

<u>Invested Assets (at fair value)</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>
Investments with T. Rowe Price							
Alaska Money Market	\$ 8,618	\$ 8,791	\$ 9,030	\$ 9,061	\$ 9,084	\$ 8,998	\$ 8,847
Small Cap Stock Fund	60,872	61,549	60,916	59,046	64,758	64,879	64,795
Alaska Balanced Trust	14,964	14,487	14,177	13,944	13,457	13,202	13,390
Long Term Balanced Fund	10,894	9,679	8,782	8,697	8,535	8,361	8,464
AK Target Date 2010 Trust	2,096	2,089	1,974	1,989	2,055	2,073	2,129
AK Target Date 2015 Trust	9,092	8,999	9,042	9,109	9,301	9,367	9,688
AK Target Date 2020 Trust	22,302	22,573	22,755	22,670	23,162	23,651	24,280
AK Target Date 2025 Trust	32,368	32,816	33,308	33,364	34,337	35,189	36,525
AK Target Date 2030 Trust	33,667	34,367	34,781	34,998	35,901	36,819	37,984
AK Target Date 2035 Trust	39,047	39,870	40,468	40,745	42,183	43,188	44,728
AK Target Date 2040 Trust	46,696	47,581	47,885	47,943	49,606	51,055	53,007
AK Target Date 2045 Trust	57,906	59,229	59,773	59,873	62,306	63,956	66,069
AK Target Date 2050 Trust	68,378	70,113	70,862	71,088	73,905	76,029	78,783
AK Target Date 2055 Trust	45,309	47,035	47,909	48,558	50,951	52,778	55,240
AK Target Date 2060 Trust	34	35	36	72	82	88	92
State Street Global Advisors							
Money Market	2,986	3,159	3,510	3,599	3,805	4,033	4,108
S&P 500 Stock Index Fund Series A	52,701	56,952	60,293	60,835	65,523	68,993	71,367
Russell 3000 Index	36,790	32,117	28,398	26,276	24,920	22,240	21,083
US Real Estate Investment Trust Index	16,951	16,226	15,866	15,338	15,477	16,445	16,482
World Equity Ex-US Index	35,145	32,463	30,476	30,431	30,600	32,338	33,746
Long US Treasury Bond Index	1,545	1,576	1,599	1,441	1,294	1,203	1,182
US Treasury Inflation Protected Securities Index	10,105	10,690	11,181	11,242	11,033	11,119	11,537
World Government Bond Ex-US Index	5,263	5,750	6,234	6,057	5,797	6,011	6,336
Global Balanced Fund	7,850	8,693	9,329	9,633	10,244	11,144	11,963
Investments with BlackRock							
Government/Credit Bond Fund	30,417	30,105	29,844	29,764	28,768	29,215	29,863
Intermediate Bond Fund	12,018	13,351	14,318	14,718	15,051	15,868	16,730
Investments with Brandes/Allianz							
International Equity Fund	29,899	34,377	37,382	37,251	36,955	38,420	39,558
Investments with RCM							
Sustainable Opportunities Fund	3,178	3,201	3,156	3,079	3,172	3,174	3,291
Total Invested Assets	\$ 697,093	\$ 707,874	\$ 713,283	\$ 710,820	\$ 732,260	\$ 749,839	\$ 771,268
<u>Change in Invested Assets</u>							
Beginning Assets	\$ 667,523	\$ 697,093	\$ 707,874	\$ 713,283	\$ 710,820	\$ 732,260	\$ 749,839
Investment Earnings	22,468	2,247	1,662	(12,849)	13,006	12,111	13,974
Net Contributions (Withdrawals)	7,102	8,533	3,748	10,385	8,433	5,468	7,455
Ending Invested Assets	\$ 697,093	\$ 707,874	\$ 713,283	\$ 710,820	\$ 732,260	\$ 749,839	\$ 771,268

Defined Contribution Retirement - Participant Directed TRS
Schedule of Investment Income and Changes in Invested Assets
for the Month Ended
January 31, 2017

	<u>Beginning Invested Assets</u>	<u>Investment Income</u>	<u>Net Contributions (Withdrawals)</u>	<u>Transfers In (Out)</u>	<u>Ending Invested Assets</u>	<u>% Change in Invested Assets</u>	<u>% Change due to Investment Income (2)</u>
Participant Options							
T. Rowe Price							
Alaska Money Market	\$ 2,944,445	\$ 1,484	\$ 20,784	\$ (100,561)	\$ 2,866,152	-2.66%	0.05%
Small Cap Stock Fund	28,018,006	368,952	84,398	(429,528)	28,041,828	0.09%	1.32%
Alaska Balanced Trust	6,117,564	63,040	15,700	(13,220)	6,183,084	1.07%	1.03%
Long Term Balanced Fund	3,731,129	58,873	11,671	(36,688)	3,764,985	0.91%	1.58%
AK Target Date 2010 Trust	514,052	6,202	5,340	-	525,594	2.25%	1.20%
AK Target Date 2015 Trust	2,691,728	38,039	31,022	-	2,760,789	2.57%	1.41%
AK Target Date 2020 Trust	7,086,076	115,072	(29,167)	-	7,171,981	1.21%	1.63%
AK Target Date 2025 Trust	11,258,831	204,388	150,965	(54,451)	11,559,733	2.67%	1.81%
AK Target Date 2030 Trust	12,570,258	250,438	222,568	-	13,043,264	3.76%	1.97%
AK Target Date 2035 Trust	19,018,828	404,367	216,346	(67)	19,639,474	3.26%	2.11%
AK Target Date 2040 Trust	19,928,715	446,306	303,165	31,153	20,709,339	3.92%	2.22%
AK Target Date 2045 Trust	32,029,008	725,820	394,122	(95,625)	33,053,325	3.20%	2.26%
AK Target Date 2050 Trust	44,714,779	1,012,939	507,970	(1,174)	46,234,514	3.40%	2.25%
AK Target Date 2055 Trust	15,838,469	360,483	437,661	(2,906)	16,633,707	5.02%	2.25%
AK Target Date 2060 Trust	6,194	506	(1)	44,083	50,782	719.86%	1.79%
Total Investments with T. Rowe Price	<u>206,468,082</u>	<u>4,056,909</u>	<u>2,372,544</u>	<u>(658,984)</u>	<u>212,238,551</u>		
State Street Global Advisors							
Money Market	248,977	87	3,516	(16,001)	236,579	-4.98%	0.04%
S&P 500 Stock Index Fund Series A	28,460,529	540,918	118,975	269,009	29,389,431	3.26%	1.89%
Russell 3000 Index	9,196,394	168,491	41,512	(672,239)	8,734,158	-5.03%	1.90%
US Real Estate Investment Trust Index	6,394,179	(57,147)	19,934	(46,894)	6,310,072	-1.32%	-0.90%
World Equity Ex-US Index	14,015,770	494,255	45,669	54,846	14,610,540	4.24%	3.51%
Long US Treasury Bond Index	275,901	1,044	3,303	454	280,702	1.74%	0.38%
US Treasury Inflation Protected Securities Index	4,244,154	35,946	11,191	145,392	4,436,683	4.54%	0.83%
World Government Bond Ex-US Index	2,892,879	45,549	5,797	124,210	3,068,435	6.07%	1.54%
Global Balanced Fund	5,329,023	99,787	16,026	250,181	5,695,017	6.87%	1.83%
Total Investments with SSGA	<u>71,057,806</u>	<u>1,328,930</u>	<u>265,923</u>	<u>108,958</u>	<u>72,761,617</u>		
BlackRock							
Government/Credit Bond Fund	13,270,152	35,894	31,542	269,124	13,606,712	2.54%	0.27%
Intermediate Bond Fund	6,434,566	12,937	13,636	345,893	6,807,032	5.79%	0.20%
Total Investments with Barclays Global Investors	<u>19,704,718</u>	<u>48,831</u>	<u>45,178</u>	<u>615,017</u>	<u>20,413,744</u>		
Brandes/Allianz Institutional (3)							
AK International Equity Fund	16,351,802	499,257	58,514	(95,190)	16,814,383	2.83%	3.06%
RCM							
Sustainable Core Opportunities Fund	1,291,504	33,869	10,773	30,199	1,366,345	5.79%	2.58%
Total All Funds	<u>\$ 314,873,912</u>	<u>\$ 5,967,796</u>	<u>\$ 2,752,932</u>	<u>\$ -</u>	<u>\$ 323,594,640</u>	<u>2.77%</u>	<u>1.89%</u>

Notes: Source data provided by the record keeper, Great West Life. (1) Represents net contributions in transit to/from the record keeper.
(2) Income divided by beginning assets plus half of net contributions/(withdrawals). Actual returns are calculated by Callan and Associates.
(3) This investment option is comprised of two funds, 50% Brandes International equity Fund and 50% Allianz NFJ International Fund effective March 30, 2015.

Defined Contribution Retirement - Participant Directed TRS
Schedule of Invested Assets with
Schedule of Investment Income and Changes in Invested Assets
By Month Through the Month Ended
January 31, 2017
\$ (Thousands)

<u>Invested Assets (at fair value)</u>	<u>July</u>	<u>August</u>	<u>September</u>	<u>October</u>	<u>November</u>	<u>December</u>	<u>January</u>
Investments with T. Rowe Price							
Alaska Money Market	\$ 2,895	\$ 2,897	\$ 2,911	\$ 2,946	\$ 2,917	\$ 2,944	\$ 2,866
Small Cap Stock Fund	26,278	26,588	26,452	25,552	27,985	28,018	28,042
Alaska Balanced Trust	7,066	6,760	6,595	6,392	6,175	6,118	6,183
Long Term Balanced Fund	4,916	4,351	3,949	3,757	3,764	3,731	3,765
AK Target Date 2010 Trust	490	487	496	501	500	514	526
AK Target Date 2015 Trust	2,657	2,538	2,537	2,561	2,619	2,692	2,761
AK Target Date 2020 Trust	6,571	6,551	6,650	6,626	6,825	7,086	7,172
AK Target Date 2025 Trust	10,506	10,517	10,640	10,625	10,889	11,259	11,560
AK Target Date 2030 Trust	11,516	11,417	11,610	11,695	12,119	12,570	13,043
AK Target Date 2035 Trust	17,502	17,490	17,674	17,836	18,378	19,019	19,639
AK Target Date 2040 Trust	18,576	18,512	18,708	18,756	19,220	19,929	20,709
AK Target Date 2045 Trust	29,696	29,659	29,930	29,954	31,079	32,029	33,053
AK Target Date 2050 Trust	41,678	41,573	41,947	41,778	43,227	44,715	46,235
AK Target Date 2055 Trust	13,833	13,836	14,050	14,334	15,009	15,838	16,634
AK Target Date 2060 Trust	9	5	6	6	6	6	51
State Street Global Advisors							
Money Market	219	222	223	227	281	249	237
S&P 500 Stock Index Fund Series A	21,625	23,391	24,718	24,988	27,064	28,461	29,389
Russell 3000 Index	15,824	13,628	11,964	10,960	10,335	9,196	8,734
US Real Estate Investment Trust Index	6,520	6,197	6,065	5,741	5,975	6,394	6,310
World Equity Ex-US Index	15,330	14,046	13,199	13,143	13,270	14,016	14,611
Long US Treasury Bond Index	238	277	284	278	278	276	281
US Treasury Inflation Protected Securities Index	3,889	3,999	4,173	4,195	4,137	4,244	4,437
World Government Bond Ex-US Index	2,575	2,808	3,050	2,937	2,757	2,893	3,068
Global Balanced Fund	3,975	4,302	4,593	4,689	4,910	5,329	5,695
Investments with BlackRock							
Government/Credit Bond Fund	14,047	13,662	13,465	13,359	12,975	13,270	13,607
Intermediate Bond Fund	4,774	5,278	5,692	5,885	6,018	6,435	6,807
Investments with Brandes/Allianz							
AK International Equity Fund	12,625	14,495	15,825	15,793	15,733	16,352	16,814
Investments with RCM							
Sustainable Opportunities Fund	1,263	1,240	1,244	1,221	1,259	1,292	1,366
Total Invested Assets	\$ 297,096	\$ 296,728	\$ 298,649	\$ 296,732	\$ 305,705	\$ 314,874	\$ 323,595
<u>Change in Invested Assets</u>							
Beginning Assets	\$ 286,112	\$ 297,096	\$ 296,728	\$ 298,649	\$ 296,732	\$ 305,705	\$ 314,874
Investment Earnings	9,751	1,009	715	(5,446)	5,578	5,113	5,968
Net Contributions (Withdrawals)	1,232	(1,376)	1,206	3,529	3,394	4,057	2,753
Ending Invested Assets	\$ 297,096	\$ 296,728	\$ 298,649	\$ 296,732	\$ 305,705	\$ 314,874	\$ 323,595

ALASKA RETIREMENT MANAGEMENT BOARD

FINANCIAL REPORT

(Supplement to the Treasury Division Report)

As of January 31, 2017

Prepared by the Division of Retirement & Benefits

ALASKA RETIREMENT MANAGEMENT BOARD
SCHEDULE OF NON-INVESTMENT CHANGES BY FUND
(Supplement to the Treasury Division Report)
For the Seven Months Ending January 31, 2017

	Contributions				Expenditures				Net
	Contributions EE and ER	State of Alaska	Other	Total Contributions	Benefits	Refunds & Disbursements	Administrative & Investment	Total Expenditures	Contributions/ (Withdrawals)
<u>Public Employees' Retirement System (PERS)</u>									
<u>Defined Benefit Plans:</u>									
Retirement Trust	\$ 206,270,568	\$ 99,166,576	\$ 23,254	\$ 305,460,398	\$ (444,864,311)	\$ (5,674,196)	\$ (8,657,141)	\$ (459,195,648)	\$ (153,735,250)
Retirement Health Care Trust	76,373,288	-	22,065,587	98,438,875	(237,359,662)	-	(14,144,364)	(251,504,026)	(153,065,151)
Total Defined Benefit Plans	282,643,856	99,166,576	22,088,841	403,899,273	(682,223,973)	(5,674,196)	(22,801,505)	(710,699,674)	(306,800,401)
<u>Defined Contribution Plans:</u>									
Participant Directed Retirement	77,171,918	-	-	77,171,918	-	(24,009,176)	(2,038,201)	(26,047,377)	51,124,541
Health Reimbursement Arrangement ^(a)	20,305,903	-	-	20,305,903	-	-	(16,463)	(16,463)	20,289,440
Retiree Medical Plan ^(a)	7,319,340	-	-	7,319,340	(24)	-	(25,417)	(25,441)	7,293,899
Occupational Death and Disability: ^(a)									
Public Employees	910,303	-	-	910,303	(67,093)	-	(5,126)	(72,219)	838,084
Police and Firefighters	425,313	-	-	425,313	(121,965)	-	(4,590)	(126,555)	298,758
Total Defined Contribution Plans	106,132,777	-	-	106,132,777	(189,082)	(24,009,176)	(2,089,797)	(26,288,055)	79,844,722
Total PERS	388,776,633	99,166,576	22,088,841	510,032,050	(682,413,055)	(29,683,372)	(24,891,302)	(736,987,729)	(226,955,679)
<u>Teachers' Retirement System (TRS)</u>									
<u>Defined Benefit Plans:</u>									
Retirement Trust	35,346,701	116,699,959	1,722	152,048,382	(260,481,010)	(1,628,352)	(4,553,348)	(266,662,710)	(114,614,328)
Retirement Health Care Trust	11,431,692	-	7,201,648	18,633,340	(70,894,740)	-	(5,280,330)	(76,175,070)	(57,541,730)
Total Defined Benefit Plans	46,778,393	116,699,959	7,203,370	170,681,722	(331,375,750)	(1,628,352)	(9,833,678)	(342,837,780)	(172,156,058)
<u>Defined Contribution Plans:</u>									
Participant Directed Retirement	22,810,948	-	-	22,810,948	-	(7,305,222)	(710,992)	(8,016,214)	14,794,734
Health Reimbursement Arrangement ^(a)	4,588,265	-	-	4,588,265	(4,447)	-	(5,022)	(9,469)	4,578,796
Retiree Medical Plan ^(a)	1,824,064	-	-	1,824,064	(7,023)	-	(23,433)	(30,456)	1,793,608
Occupational Death and Disability ^(a)	-	-	-	-	-	-	(4,793)	(4,793)	(4,793)
Total Defined Contribution Plans	29,223,277	-	-	29,223,277	(11,470)	(7,305,222)	(744,240)	(8,060,932)	21,162,345
Total TRS	76,001,670	116,699,959	7,203,370	199,904,999	(331,387,220)	(8,933,574)	(10,577,918)	(350,898,712)	(150,993,713)
<u>Judicial Retirement System (JRS)</u>									
Defined Benefit Plan Retirement Trust	4,105,623	5,412,366	-	9,517,989	(6,668,912)	-	(116,377)	(6,785,289)	2,732,700
Defined Benefit Retirement Health Care Trust	332,743	-	69,490	402,233	(458,629)	-	(53,348)	(511,977)	(109,744)
Total JRS	4,438,366	5,412,366	69,490	9,920,222	(7,127,541)	-	(169,725)	(7,297,266)	2,622,956
<u>National Guard/Naval Militia Retirement System (NGNMRS)</u>									
Defined Benefit Plan Retirement Trust ^(a)	866,905	-	-	866,905	(785,097)	-	(130,771)	(915,868)	(48,963)
<u>Other Participant Directed Plans</u>									
Supplemental Annuity Plan	95,476,054	-	96	95,476,150	-	(114,004,689)	(2,570,819)	(116,575,508)	(21,099,358)
Deferred Compensation Plan	24,950,592	-	-	24,950,592	-	(32,808,528)	(885,238)	(33,693,766)	(8,743,174)
Total All Funds	590,510,220	221,278,901	29,361,797	841,150,918	(1,021,712,913)	(185,430,163)	(39,225,773)	(1,246,368,849)	(405,217,931)
Total Non-Participant Directed	370,100,708	221,278,901	29,361,701	620,741,310	(1,021,712,913)	(7,302,548)	(33,020,523)	(1,062,035,984)	(441,294,674)
Total Participant Directed	220,409,512	-	96	220,409,608	-	(178,127,615)	(6,205,250)	(184,332,865)	36,076,743
Total All Funds	\$ 590,510,220	\$ 221,278,901	\$ 29,361,797	\$ 841,150,918	\$ (1,021,712,913)	\$ (185,430,163)	\$ (39,225,773)	\$ (1,246,368,849)	\$ (405,217,931)

(a) Employer only contributions.

ALASKA RETIREMENT MANAGEMENT BOARD
SCHEDULE OF NON-INVESTMENT CHANGES BY FUND
(Supplement to the Treasury Division Report)
For the Month Ended January 31, 2017

	Contributions				Expenditures				Net
	Contributions EE and ER	State of Alaska	Other	Total Contributions	Benefits	Refunds & Disbursements	Administrative & Investment	Total Expenditures	Contributions/ (Withdrawals)
<u>Public Employees' Retirement System (PERS)</u>									
<u>Defined Benefit Plans:</u>									
Retirement Trust	\$ 29,447,077	\$ -	\$ 1,147	\$ 29,448,224	\$ (63,682,593)	\$ (653,271)	\$ (605,210)	\$ (64,941,074)	\$ (35,492,850)
Retirement Health Care Trust	10,415,253	-	5,766	10,421,019	(31,933,040)	-	(1,692,547)	(33,625,587)	(23,204,568)
Total Defined Benefit Plans	39,862,330	-	6,913	39,869,243	(95,615,633)	(653,271)	(2,297,757)	(98,566,661)	(58,697,418)
<u>Defined Contribution Plans:</u>									
Participant Directed Retirement	11,401,282	-	-	11,401,282	-	(3,565,023)	(381,335)	(3,946,358)	7,454,924
Health Reimbursement Arrangement ^(a)	3,064,124	-	-	3,064,124	-	-	(422)	(422)	3,063,702
Retiree Medical Plan ^(a)	1,031,077	-	-	1,031,077	-	-	(133)	(133)	1,030,944
Occupational Death and Disability: ^(a)								-	
Public Employees	131,108	-	-	131,108	(9,585)	-	(35)	(9,620)	121,488
Police and Firefighters	52,316	-	-	52,316	(14,121)	-	(14)	(14,135)	38,181
Total Defined Contribution Plans	15,679,907	-	-	15,679,907	(23,706)	(3,565,023)	(381,939)	(3,970,668)	11,709,239
Total PERS	55,542,237	-	6,913	55,549,150	(95,639,339)	(4,218,294)	(2,679,696)	(102,537,329)	(46,988,179)
<u>Teachers' Retirement System (TRS)</u>									
<u>Defined Benefit Plans:</u>									
Retirement Trust	5,975,138	-	63	5,975,201	(37,105,034)	(304,151)	(214,344)	(37,623,529)	(31,648,328)
Retirement Health Care Trust	1,921,056	-	-	1,921,056	(9,086,167)	-	(574,807)	(9,660,974)	(7,739,918)
Total Defined Benefit Plans	7,896,194	-	63	7,896,257	(46,191,201)	(304,151)	(789,151)	(47,284,503)	(39,388,246)
<u>Defined Contribution Plans:</u>									
Participant Directed Retirement	3,799,020	-	-	3,799,020	-	(880,373)	(165,715)	(1,046,088)	2,752,932
Health Reimbursement Arrangement ^(a)	776,631	-	-	776,631	(4,447)	-	(124)	(4,571)	772,060
Retiree Medical Plan ^(a)	267,096	-	-	267,096	(7,023)	-	(94)	(7,117)	259,979
Occupational Death and Disability ^(a)	-	-	-	-	-	-	(10)	(10)	(10)
Total Defined Contribution Plans	4,842,747	-	-	4,842,747	(11,470)	(880,373)	(165,943)	(1,057,786)	3,784,961
Total TRS	12,738,941	-	63	12,739,004	(46,202,671)	(1,184,524)	(955,094)	(48,342,289)	(35,603,285)
<u>Judicial Retirement System (JRS)</u>									
Defined Benefit Plan Retirement Trust	253,976	-	-	253,976	(958,077)	-	(2,829)	(960,906)	(706,930)
Defined Benefit Retirement Health Care Trust	24,598	-	-	24,598	(73,135)	-	(2,908)	(76,043)	(51,445)
Total JRS	278,574	-	-	278,574	(1,031,212)	-	(5,737)	(1,036,949)	(758,375)
<u>National Guard/Naval Militia Retirement System (NGNMRS)</u>									
Defined Benefit Plan Retirement Trust ^(a)	-	-	-	-	(110,034)	-	(14,843)	(124,877)	(124,877)
<u>Other Participant Directed Plans</u>									
Supplemental Annuity Plan	7,854,068	-	-	7,854,068	-	(17,137,413)	(468,169)	(17,605,582)	(9,751,514)
Deferred Compensation Plan	2,148,774	-	-	2,148,774	-	(4,608,212)	(151,790)	(4,760,002)	(2,611,228)
Total All Funds	78,562,594	-	6,976	78,569,570	(142,983,256)	(27,148,443)	-	(174,407,028)	(95,837,458)
Total Non-Participant Directed	53,359,450	-	6,976	53,366,426	(142,983,256)	(957,422)	(3,108,320)	(147,048,998)	(93,682,572)
Total Participant Directed	25,203,144	-	-	25,203,144	-	(26,191,021)	(1,167,009)	(27,358,030)	(2,154,886)
Total All Funds	\$ 78,562,594	\$ -	\$ 6,976	\$ 78,569,570	\$ (142,983,256)	\$ (27,148,443)	\$ (4,275,329)	\$ (174,407,028)	\$ (95,837,458)

(a) Employer only contributions.

ALASKA RETIREMENT MANAGEMENT BOARD
SCHEDULE OF NON-INVESTMENT CHANGES BY FUND
(Supplement to the Treasury Division Report)
For the Seven Months Ending January 31, 2017

PARTICIPANT DIRECTED DISBURSEMENTS BY PLAN AND BY TYPE

	PERS DCR Plan	TRS DCR Plan	Supplemental Annuity Plan	Deferred Compensation	TOTAL	% of Total
Payment to Beneficiary	3,849	-	77,568	102,329	183,745	0.1%
Death Benefit	721,910	59,868	4,442,237	400,413	5,624,429	3.2%
Disability / Hardship	114,558	-	286,321	72,889	473,768	0.3%
Minimum Required Distribution	28,367	14,363	3,836,393	1,434,106	5,313,228	3.0%
Qualified Domestic Relations Order	331,984	-	3,487,488	742,331	4,561,803	2.6%
Separation from Service / Retirement	22,808,508	7,230,991	101,240,277	29,922,204	161,201,979	90.5%
Purchase of Service Credit	-	-	634,406	134,256	768,662	0.4%
Transfer to a Qualifying Plan	-	-	-	-	-	0.0%
TOTAL	<u>24,009,176</u>	<u>7,305,222</u>	<u>114,004,689</u>	<u>32,808,528</u>	<u>178,127,615</u>	<u>100.0%</u>

Notes for the DRB Supplement to the Treasury Report
January 2017

This report is the DRB supplement to the Financial Report presented by the Treasury Division, and expands their “Net Contributions (Withdrawals)” column into contributions and expenditures. It shows contributions received from both employers and employees, contributions from the State of Alaska, and other non-investment income. It also breaks out expenditures into benefits, refunds & disbursements, and administrative & investment expenditures. The net amount of total contributions and total expenditures, presented as “Net Contributions (Withdrawals)”, agrees with the same column in the Treasury Division Report. Page one shows the year-to-date totals for the first seven months of Fiscal Year 2017, while page two shows only the month of January 2017.

Highlights – On page one, for the seven months ending January 31, 2017:

- PERS DB Pension – Average employer and employee contributions of \$29.5 million per month; benefit payments of approximately \$63.6 million per month; refunds average \$811 thousand with a HIGH of \$1.1 million in July 2016 and a LOW of \$433 thousand in December 2016; and Administrative and Investment expenditures of \$1.2 million per month (DOR and DRB).
- PERS DB Healthcare – Average employer contributions of \$10.9 million per month; other income from Rx rebates and similar total of \$22.1 million; benefit payments of approximately \$33.9 million per month; and average Administrative and Investment expenditures of \$2 million per month (DOR and DRB).
- PERS DC Pension – Average employer and employee contributions of \$11 million per month; participant disbursements average \$3.4 million per month; and average Administrative and Investment expenditures of \$291 thousand per month (DOR and DRB).
- PERS DC Health – For HRA, RMP, and OD&D, only employer contributions on behalf of participating employees; currently eleven (11) benefits are being paid from the Occupational Death & Disability plans; 5 are for Public Employees and 6 are for Police and Firefighters.
- TRS DB Pension - Average employer and employee contributions of \$5 million per month; benefit payments of approximately \$37.2 million per month; refunds average \$233 thousand with a HIGH of \$309 thousand in August 2016 and a LOW of \$152 thousand in July 2016; and average Administrative and Investment expenditures of \$650 thousand per month (DOR and DRB).
- TRS DB Healthcare – Average employer contributions of \$1.6 million per month; other income from Rx rebates and similar total of \$7.2 million; benefit payments of approximately \$10.1 million per month; and average Administrative and Investment expenditures of \$754 thousand per month (DOR and DRB).

- TRS DC Pension – Average employer and employee contributions of \$3.3 million per month; participant disbursements average \$1 million per month; and average Administrative and investment expenditures of \$102 thousand per month (DOR and DRB).
- TRS DC Health – For HRA, RMP, and OD&D, only employer contributions on behalf of participating employees; currently no benefits paid from any category; and minor Administrative and Investment expenditures for each category (DOR and DRB).
- JRS Pension – Average employer and employee contributions of \$587 thousand per month; benefit payments of approximately \$953 thousand per month; and average Administrative and Investment expenditures of \$17 thousand per month (DOR and DRB).
- JRS Healthcare – Average employer contributions of \$48 thousand per month; other income from Rx rebates and similar total of \$69 thousand; benefit payments of approximately \$66 thousand per month; and average Administrative and Investment expenditures of 7621.352857 per month (DOR and DRB).
- NGNMRS – Annual contribution from DMVA in the amount of \$867 thousand was received in September 2016; combination of lump-sum and monthly benefit payments of \$112 thousand per month with a HIGH of \$218 thousand in October 2016 and a LOW of \$55 thousand in December 2016; and average Administrative and Investment expenditures of \$19 thousand per month (DOR and DRB).
- SBS – Average employer and employee contributions and transfers in of \$13.6 million per month. Participant disbursements average of \$16.3 million per month with a HIGH of \$19.7 million in August 2016 and a LOW of \$13.5 million in November 2016; and average Administrative and Investment expenditures of \$367 thousand per month (DOR and DRB).
- Deferred Compensation – Average member-only contributions and transfers in of \$3.6 million per month; participant disbursements average of \$4.7 million per month; and average Administrative and Investment expenditures of \$126 thousand per month (DOR and DRB).

Highlights – On page two, activity for the one month ending January 31, 2017 only: nothing significant to report

If you have any questions or comments, please let me know.

Analytic Investors, LLC

Mandate: Buy Write Strategy

Hired: 2011

Firm Information	Investment Approach	Total ARMB Mandate
<p>Wells Fargo Asset Management acquired Analytic Investors on October 1, 2016.</p> <p>As of 12/31/2016, Analytic's total assets under management were \$17.6 billion.</p> <p>Key Executives:</p> <p>Harin de Silva, Ph.D., CFA <i>President / Portfolio Manager</i></p> <p>Greg McMurran <i>Chief Investment Officer / Portfolio Manager</i></p> <p>Dennis Bein, CFA <i>Chief Investment Officer / Portfolio Manager</i></p> <p>Michael Brogan <i>Managing Director</i></p> <p>Amy Stueve <i>Chief Compliance Officer</i></p> <p>Megan Miller, CFA <i>Portfolio Manager</i></p>	<p>Analytic's investment objective is to outperform the CBOE S&P 500 BuyWrite (BXM) Index while managing tracking error to be less than 2% relative to the BXM Index.</p> <p>Given this low tracking error limit, the strategy is structured to behave very similarly to the BXM Index. The BXM Index is comprised of the S&P 500 Index with a one month at the money S&P 500 Index call option sold monthly at regular expiration (3rd Friday of each month).</p> <p>The equity component of this strategy is managed by SSGA and is passively managed relative to the S&P 500 index.</p> <p>Analytic attempts to add value by option security selection. While Analytic limits the options they sell to S&P 500 Index options, they actively select call options that they believe are overvalued to add value versus the BXM Index.</p> <p>Benchmark: CBOE S&P 500 BuyWrite Index</p>	<p>Assets Under Management: 12/31/2016: \$317 Million</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>
Analytic Investors	2.61%	8.52%	6.56%	8.03%
CBOE S&P 500 BuyWrite Index	2.64%	7.07%	5.98%	7.24%

ALASKA RETIREMENT MANAGEMENT BOARD REVIEW

March 2, 2017



Analytic Buy-Write Strategy

- 1 Firm Update
- 2 Investment Objective and Results
- 3 Volatility Risk Premium and BXM Index
- 4 Appendix

Analytic Attendees:

Greg McMurran, Chief Investment Officer, Portfolio Manager

Megan Miller, CFA, Portfolio Manager

Kevin Clark, CFA, Director, Relationship Management

Quantitative Investment Manager

Organization

- Headquarters: Los Angeles
- Investment professionals: 19
- Client Service/Marketing: 11

Capabilities

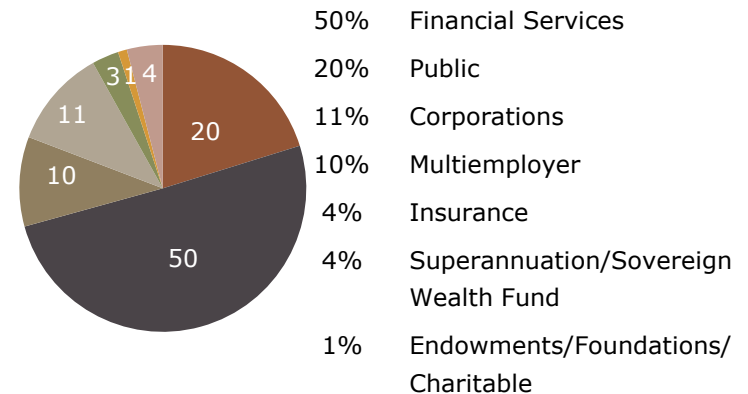
- Benchmark Oriented (Beta 1)
 - Core Equity
 - Short Extension
- Low Volatility Equity
- Alternatives
 - Long/Short Equity
 - Covered Call
 - Market Neutral Equity

As of 12/31/2016

**Includes four clients and \$1.52B of non-discretionary assets as of 11/30/2016, where Analytic does not have trading authority over the client portfolio.*

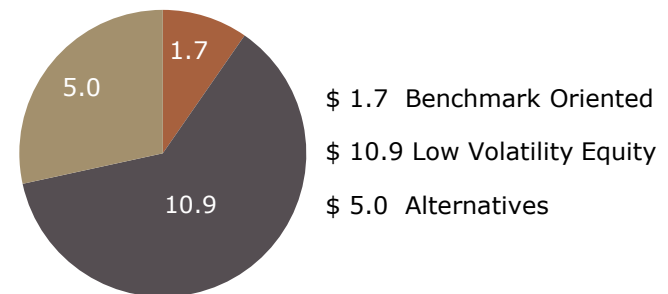
Clients

Total Client Relationships: 81*



Asset Composition

Total Assets: \$17.6B USD*



Investment Team

PORTFOLIO MANAGERS

Harindra de Silva, Ph.D., CFA – President / Portfolio Manager



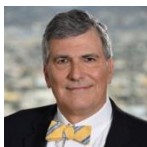
- Joined firm in 1995; 31 years of investment experience
- Ph.D. in Finance, University of California, Irvine
- MBA in Finance, University of Rochester
- MS in Econometrics, University of Rochester
- BS in Mechanical Engineering, University of Manchester

David Krider, CFA – Portfolio Manager



- Joined firm in 2005
- 14 years of investment experience
- BA in Economics, California Institute of Technology
- BS in Computer Science, California Institute of Technology

Greg McMurran – Chief Investment Officer / Portfolio Manager



- Joined firm in 1976
- 40 years of investment experience
- MA in Economics, California State University, Fullerton
- BS in Economics, University of California, Irvine

Dennis Bein, CFA – Chief Investment Officer / Portfolio Manager



- Joined firm in 1995
- 26 years of investment experience
- MBA in Finance, University of California, Riverside
- BS in Business Administration, University of California, Riverside

Ryan Brown, CFA – Portfolio Manager



- Joined firm in 2007
- 11 years of investment experience
- MS in Finance, University of Utah
- BS in Economics, Brigham Young University

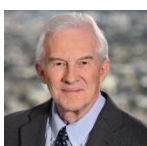
Megan Miller, CFA – Portfolio Manager



- Joined firm in 2008
- 11 years of investment experience
- BS in Mathematics, University of California, Los Angeles

CHAIRMAN

Roger Clarke, Ph.D. – Chairman



- Joined firm in 1985
- 39 years of investment experience
- Ph.D. in Finance, Stanford University
- MBA, Brigham Young University
- MS in Economics, Stanford University
- BA in Physics, Brigham Young University

TRADING

Andrew Claeys, CFA – Director of Trading



- Joined firm in 2007
- 12 years of investment experience
- BS in Business Administration, University of Denver

RESEARCH ADVISORS

Doug Savarese, CFA – Research Advisor



- Joined firm in 1998
- 29 years of investment experience
- BA in Mathematics, The Richard Stockton College of New Jersey
- BS in Business Administration, The Richard Stockton College of New Jersey

Stephen Thorley, Ph.D., CFA – Research Advisor



- Joined firm in 2000
- 27 years of investment experience
- Ph.D. in Financial Economics, University of Washington
- MBA in Business, Brigham Young University
- B.S. in Mathematics, Brigham Young University

Alaska Retirement Management Board

OBJECTIVES

- Outperform BXM Index, over time, net of fees
- Manage Tracking Error to be less than 2% versus the BXM Index
- Long U.S. equity positions managed by SSgA (passive S&P 500 Index)
- Call options managed by Analytic

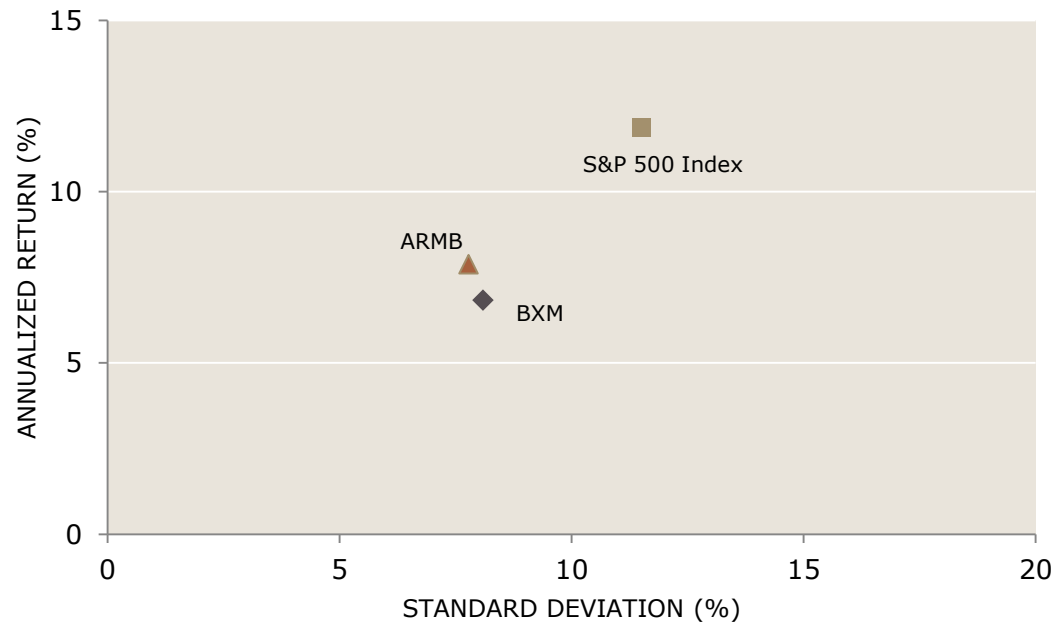
RESULTS

- Inception Date: March 9, 2011
- December 31, 2016 Account Value: \$316.6 Million
- Annualized Since Inception Excess Return: 1.05%
- Since Inception Tracking Error: 1.50%

Performance

Alaska Retirement Management Board Performance

March 9, 2011 (Inception) – December 31, 2016



Periods greater than one year are annualized.

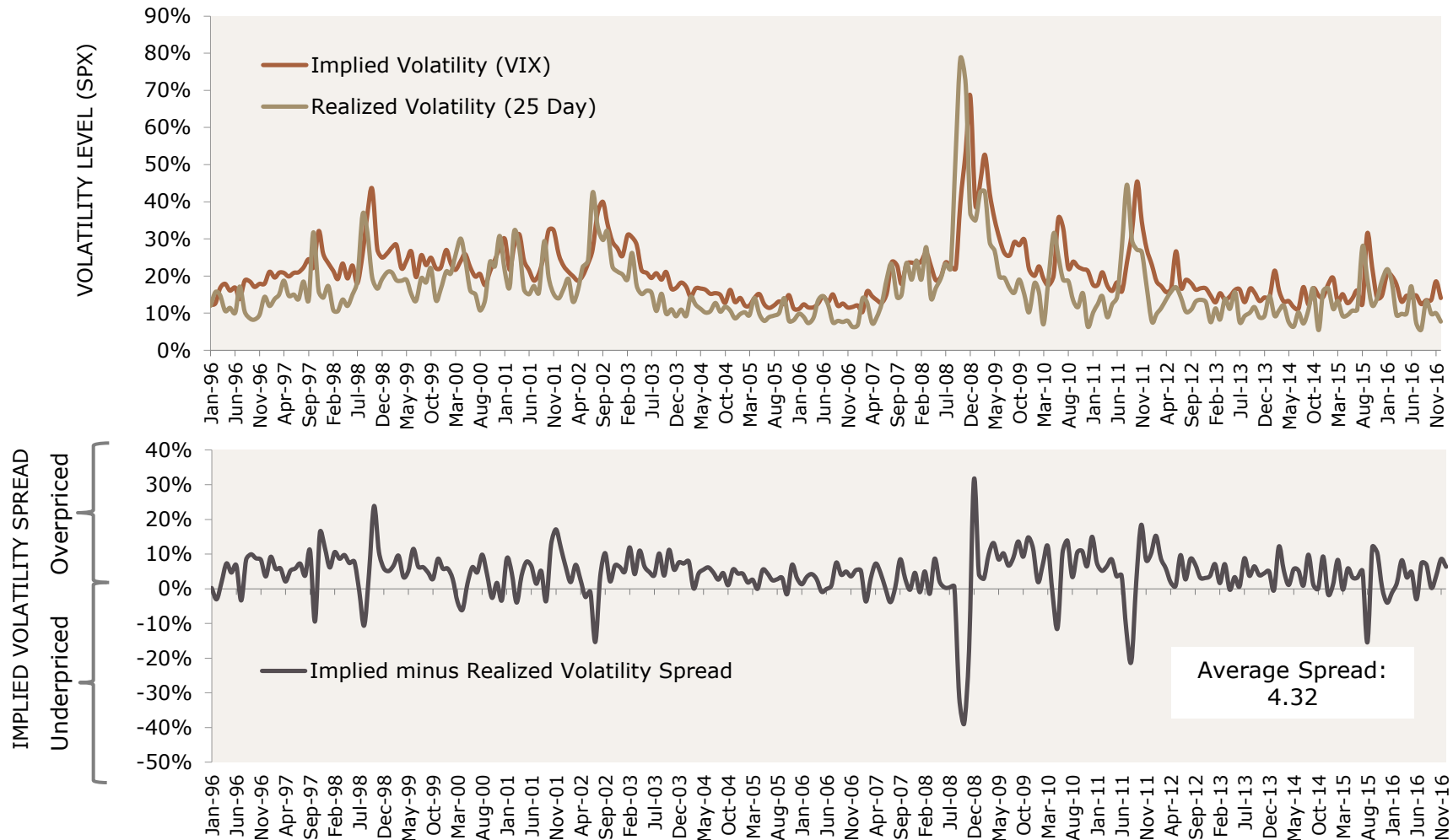
Performance is presented gross of fees and does not reflect the deduction of investment advisory fees. Client's return will be reduced by the advisory fees (as described in Part II of the adviser's Form ADV) and any other expenses it may incur in the management of its investment advisory accounts. Past performance does not guarantee future results.

	Return (%)	Standard Deviation (%)	Volatility Reduction vs. S&P 500
ARMB (Gross)	7.88	7.78	32.3%
CBOE BuyWrite (BXM) Index	6.83	8.09	29.7%
S&P 500 Index	11.89	11.51	

Volatility

The Market Tends to Consistently Overprice Volatility

January 1996 – December 2016



Source: Bloomberg

Our Edge

RESEARCH

- Research focused on obtaining better exposure to the Volatility Risk Premium than present in BXM by adjusting option strikes and expirations



IMPLEMENTATION

- Implementing a BXM replicating option portfolio has proved difficult for other managers
- Our investment and trading experience has resulted in a low tracking error high value added BXM replicating covered call portfolio



RISK MANAGEMENT

- We have consistently maintained a low tracking error option portfolio and a hedging option portfolio relative to BXM

What is the BXM Index?

The CBOE S&P 500 BuyWrite Index (BXM) is a benchmark index designed to track the performance of a hypothetical buy-write strategy on the S&P 500 Index

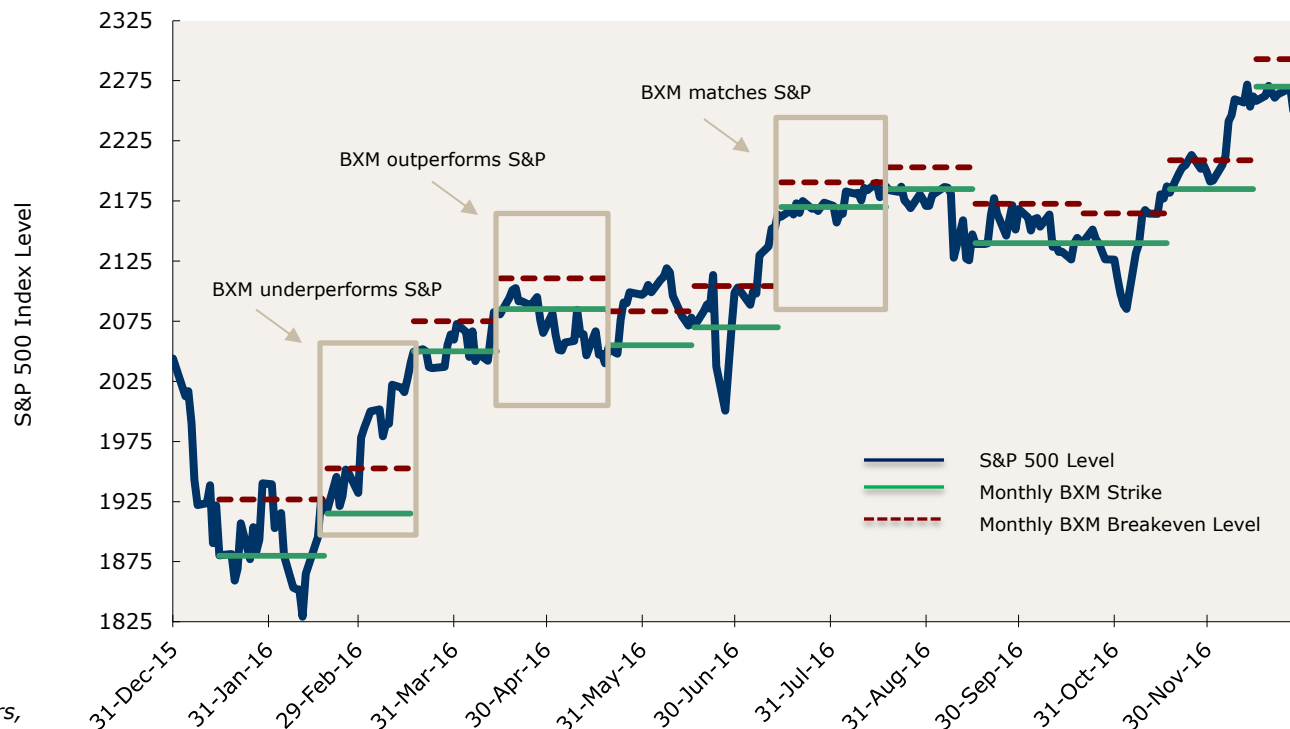
The BXM is a passive total return index based on:

- (1) buying an S&P 500 stock index portfolio, and
- (2) "writing" (or selling) a near-term "covered" call option, generally on the third Friday of each month.
 - The SPX call written will have about one month remaining to expiration, with an exercise price just above the prevailing index level (i.e., slightly out of the money).
 - The SPX call is held until expiration and cash settled, at which time a new one-month, near-the-money call is written.

2016 Market Environment

The following details the monthly roll levels for the BXM Index for the year. The solid dark blue line charts the return for the S&P 500 Index. The solid green indicate the BXM option strike price for each option cycle, and the dotted red line is the break-even price for the option cycle.

Once the S&P breaks through the dotted red line, the upside is capped and the option return becomes negative. The premium provides some protection against this loss which is why the breakeven strike price is higher than the actual strike price.

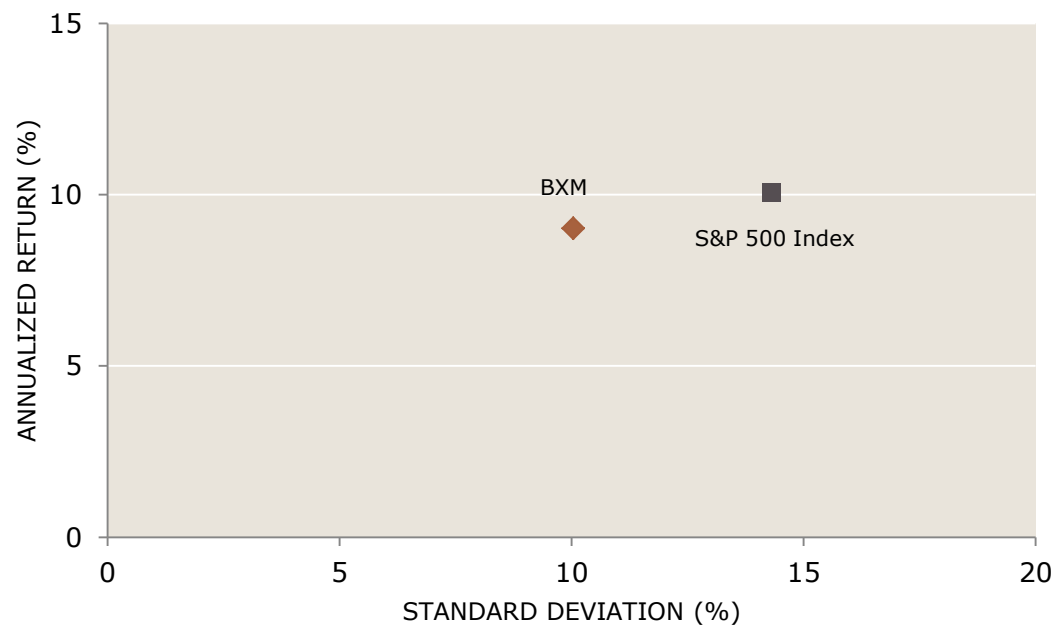


Source: Analytic Investors,
Bloomberg

Benchmark Performance

BXM versus S&P 500 Index

July 1, 1988 – December 31, 2016



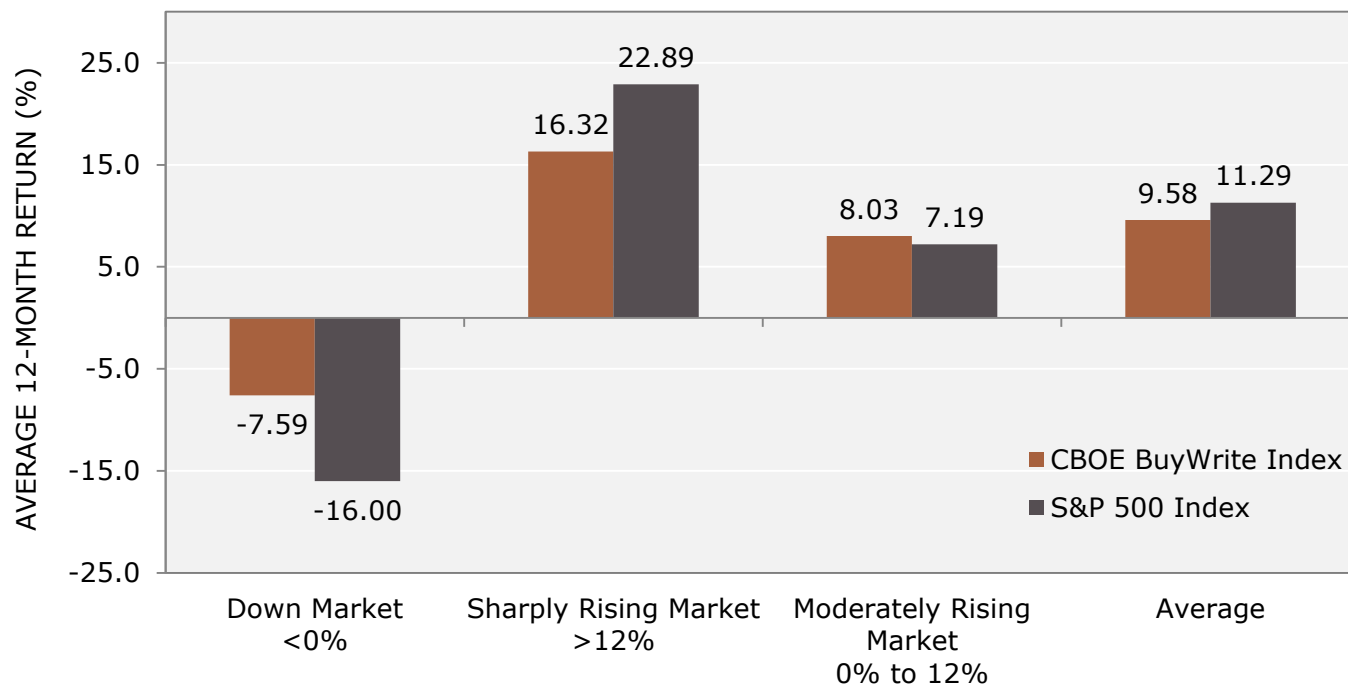
	Return (%)	Standard Deviation (%)	Volatility Reduction	Sharpe Ratio
CBOE BuyWrite (BXM) Index	9.02	10.04	29.9%	0.58
S&P 500 Index	10.06	14.32		0.48

Source: Bloomberg and Zephyr StyleAdvisor
July 1988 is the inception date of the CBOE BuyWrite (BXM) Index.

Historical Market Returns

Downside Protection, Up-Market Participation

July 1, 1988 – December 31, 2016



Source: Zephyr StyleAdvisor
July 1988 is the inception
date of the CBOE BuyWrite
(BXM) Index.



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Senior Team Members

Gregory M. McMurran
Chief Investment Officer / Portfolio Manager



As Chief Investment Officer, Greg McMurran oversees the implementation of the firm's investment strategies. He is a major contributor to the firm's ongoing research efforts as well as new product development and strategy applications. As a portfolio manager, Greg focuses on day-to-day portfolio management and research related to derivatives-based investment strategies.

With 30 years of quantitative research, portfolio management and trading experience, Greg has an extensive background in managing quantitative investment portfolios. Greg is also recognized as an authority on options valuation and strategies and has authored several articles.

Greg is a frequent participant of the CBOE Roundtable Committee, which meets and discusses industry trends, new product ideas and indexes. The introduction of the BXM Index and weekly options were inspired by this Committee.

- ▶ Joined firm in 1976
- ▶ 40 years of investment experience
- ▶ M.A. in Economics, California State University, Fullerton
- ▶ B.A. in Economics, University of California, Irvine

Senior Team Members

Megan Miller, CFA
Portfolio Manager



Megan Miller is responsible for portfolio management and trading support for derivatives-based investment strategies.

Megan is involved in both research and the portfolio construction of client portfolios. Specifically, she researches new models and ways to enhance existing models used in the investment process, develops and maintains optimization inputs and volatility forecasts, and develops and maintains optimization frameworks used to create client portfolios.

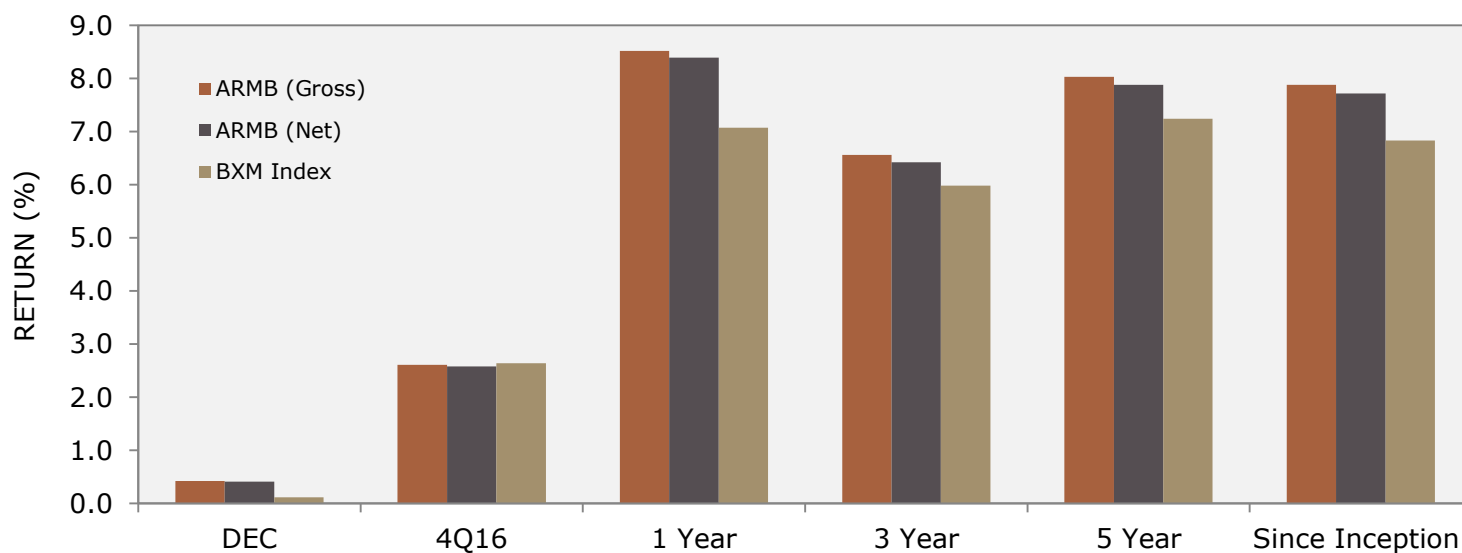
- Joined firm in 2008
- 11 years investment experience
- B.S. in Applied Mathematics, University of California, Los Angeles

Performance

Performance

Inception Date	3/9/2011
Reporting End Date	12/31/2016
Currency	USD

	Standard Deviation	Volatility Reduction vs. S&P 500
ARMB (Gross)	7.78	32.3%
BXM Index	8.09	29.7%
S&P 500 Index	11.51	



Periods greater than one year are annualized.

Performance is presented gross and net of fees. Past performance does not guarantee future results.

	DEC	4Q16	1 Year	3 Year	5 Year	Since Inception
ARMB (Gross)	0.42	2.61	8.52	6.56	8.03	7.88
ARMB (Net)	0.41	2.58	8.39	6.42	7.88	7.72
BXM Index	0.11	2.64	7.07	5.98	7.24	6.83

DePrince, Race & Zollo, Inc.

Mandate: Micro Cap Value

Hired: 2011

Firm Information	Investment Approach	Total ARMB Mandate
<p>DePrince, Race & Zollo, Inc. is a 100% employee owned company that was founded in 1995. The firm, based in Winter Park, Florida currently employs 43 professionals.</p> <p>As of 12/31/2016, the firm's total assets under management were \$5.5 billion.</p> <p>Key Executives:</p> <p>Victor A. Zollo, Jr. <i>Founding Partner & Co-Chief Executive Officer</i></p> <p>Gregory T. Ramsby <i>Managing Partner, Portfolio Manager</i></p> <p>Kelly W. Carbone <i>Managing Partner, Director of Marketing</i></p>	<p>DePrince, Race & Zollo, Inc. (DRZ) believes undervalued stocks with an above average yield and a fundamental catalyst provide the opportunity for superior long-term total returns. DRZ seeks to own undervalued stocks with a minimum 1% dividend yield and a fundamental catalyst to obtain superior long-term total returns. Bottom-up stock selection is the key component to performance. Research moves up from company to industry and economy, to a confirmation of improving fundamental prospects. DRZ moves funds into new stocks which have better risk/reward prospects.</p> <p>Benchmark: Russell Micro Cap Value Index</p>	<p>Assets Under Management: 12/31/2016: \$103 Million</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>
DRZ Micro Cap Value	20.84%	46.47%	9.39%	14.49%
Russell Micro Cap Value Index	16.32%	30.59%	8.01%	16.92%

Alaska Retirement Management Board

March 2, 2017

**Kelly W. Carbone – Managing Partner
Gregory T. Ramsby – Managing Partner
Randy A. Renfrow, CFA – Partner**

**DePrince, Race & Zollo, Inc.
250 Park Avenue South • Suite #250 • Winter Park, FL 32789
(407) 420-9903**

- Founded in 1995
- 100% Employee Owned
 - 29 Investment Professionals
 - 14 Administrative Staff
- Serving 72 Clients
 - Small, focused firm with goal to provide superior performance and service to the institutional marketplace
- Total Firm Assets: \$5.6 Billion as of 12/31/16
- Value Investment Strategies:
 - U.S. Large-Cap: \$2.8 Billion
 - U.S. Small-Cap: \$1.8 Billion
 - U.S. Micro-Cap: \$461 Million
 - U.S. SMID-Cap: \$106 Million
 - Non U.S.
 - International: \$173 Million
 - International Small-Cap: \$29 Million
 - Emerging Markets: \$92 Million
 - Global: \$73 Million

- Undervalued stocks with a minimum 1% dividend yield and a fundamental catalyst provide the opportunity for superior long-term total returns.
- Bottom-up stock selection is the key component of performance.
- Research moves up from company to industry and economy, to confirm improving fundamental prospects.
- Funds are moved into new stocks which have better risk/reward prospects.

Three Equally Balanced Factors

BUY DECISION

- Minimum 1% Dividend Yield
- Low Relative Valuation
- Fundamental Catalyst

SELL DECISION

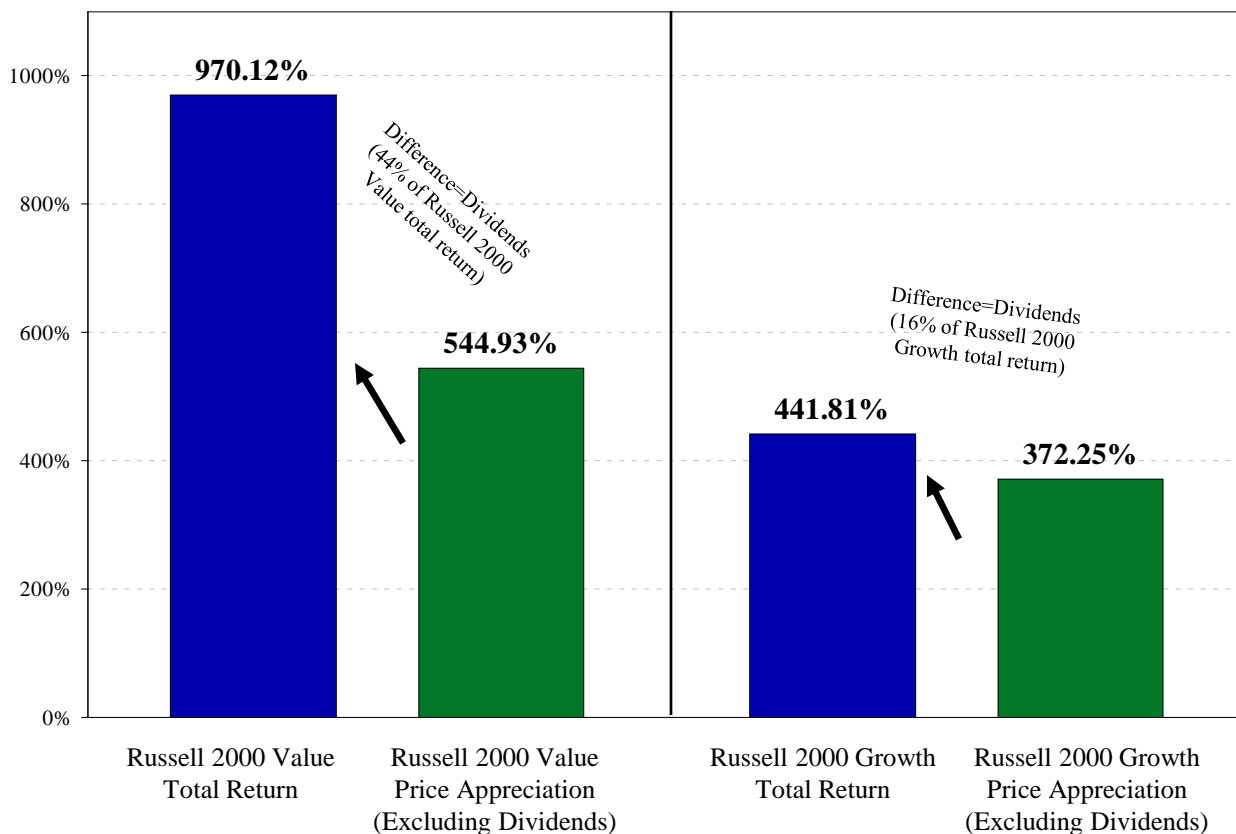
- Yield Declines
- Relative Price Target Reached
- Fundamentals Not Performing as Expected

We believe:

- Dividend yield provides a meaningful portion of the market's return
- Dividend yield offers concrete evidence of real earnings
 - Provides the most reliable valuation measure
- The return of cash to shareholders in the form of dividends encourages capital allocation discipline

The Difference Dividends Make

Cumulative performance since inception of the indexes, 05/31/1993–12/31/2016



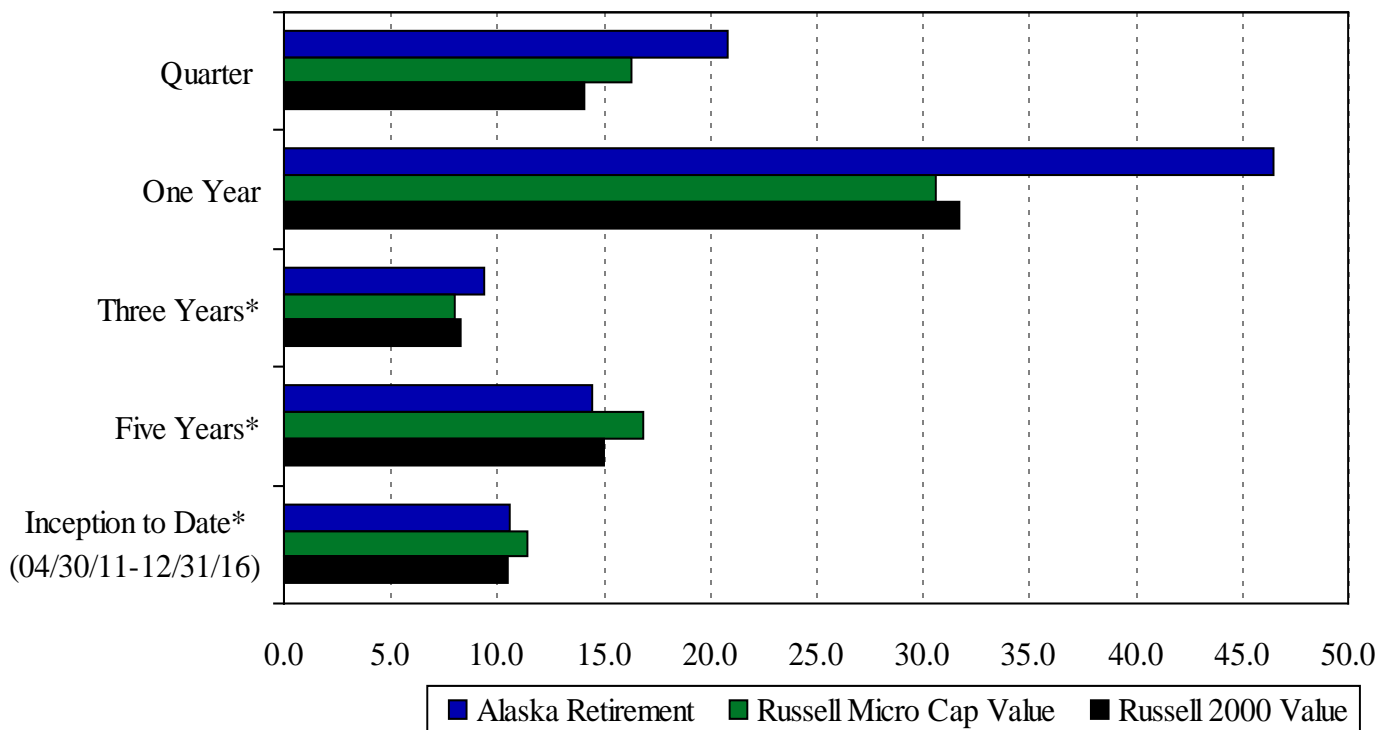
Source: Russell Investments Co.

Performance Report



December 31, 2016

Alaska Retirement Management Board



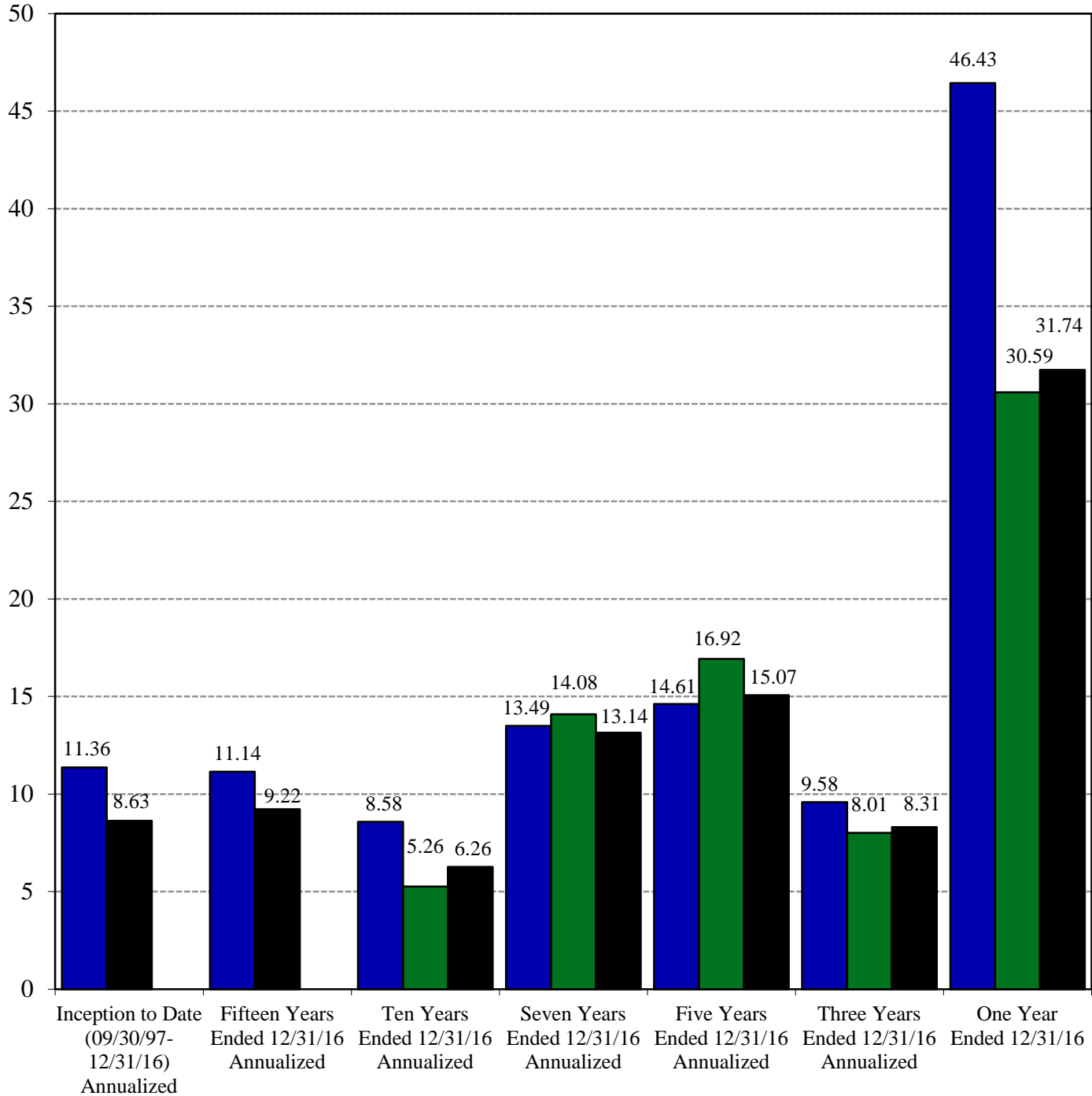
Annualized*	Alaska Retirement	Russell Microcap Value	Russell 2000 Value
Quarter	20.84%	16.32%	14.07%
One Year	46.47%	30.59%	31.74%
Three Years*	9.39%	8.01%	8.31%
Five Years*	14.49%	16.92%	15.07%
Inception to Date* (04/30/11-12/31/16)	10.64%	11.40%	10.48%

Market Value on 12/31/15	\$70,403,682
Contributions	0
Withdrawals	(205,454)
Gain (Loss)	30,575,579
Interest and Dividends	2,129,296
Market Value on 12/31/16	\$102,903,103

Investment Performance



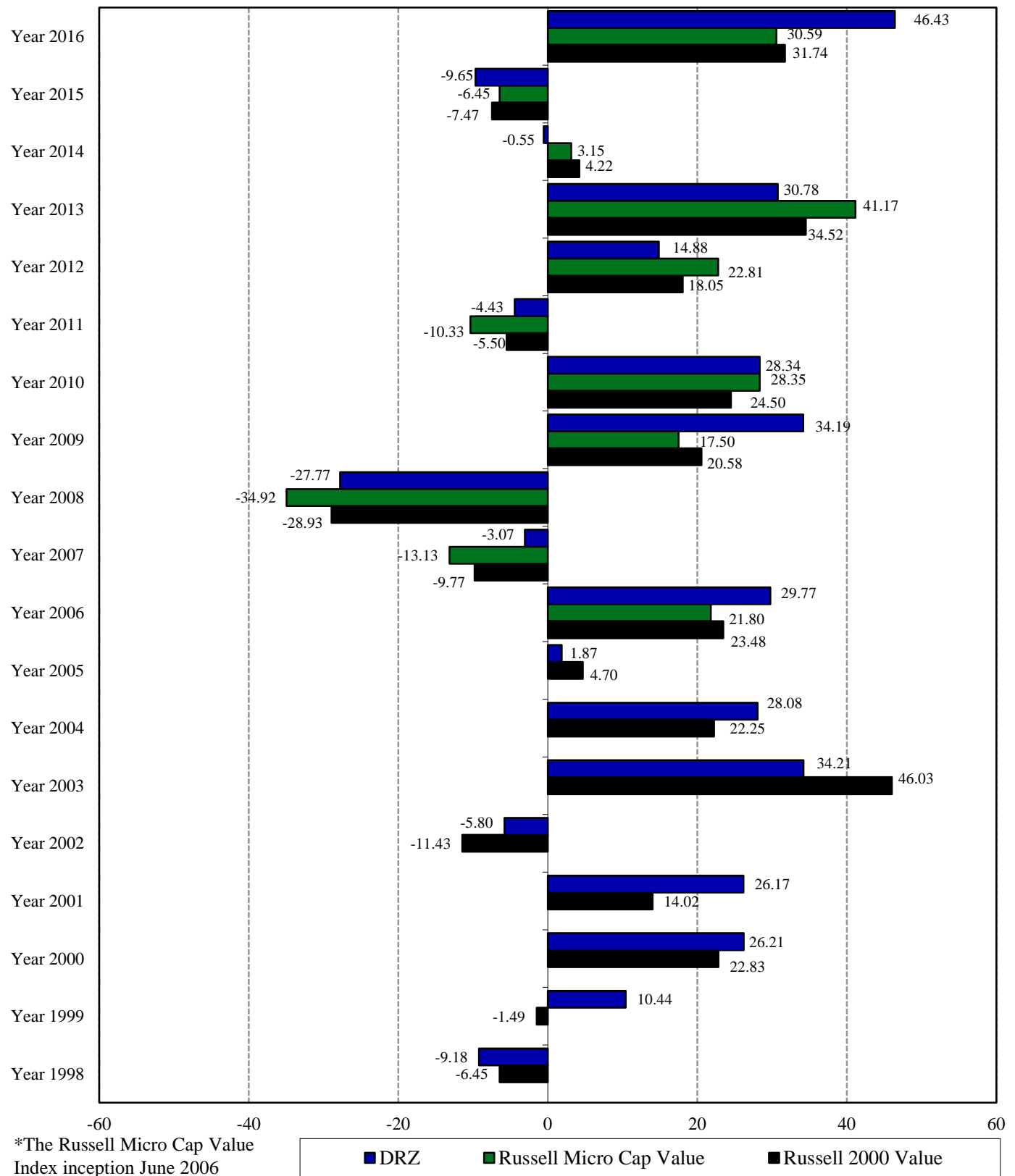
December 31, 2016



■ DRZ ■ Russell Micro Cap Value ■ Russell 2000 Value

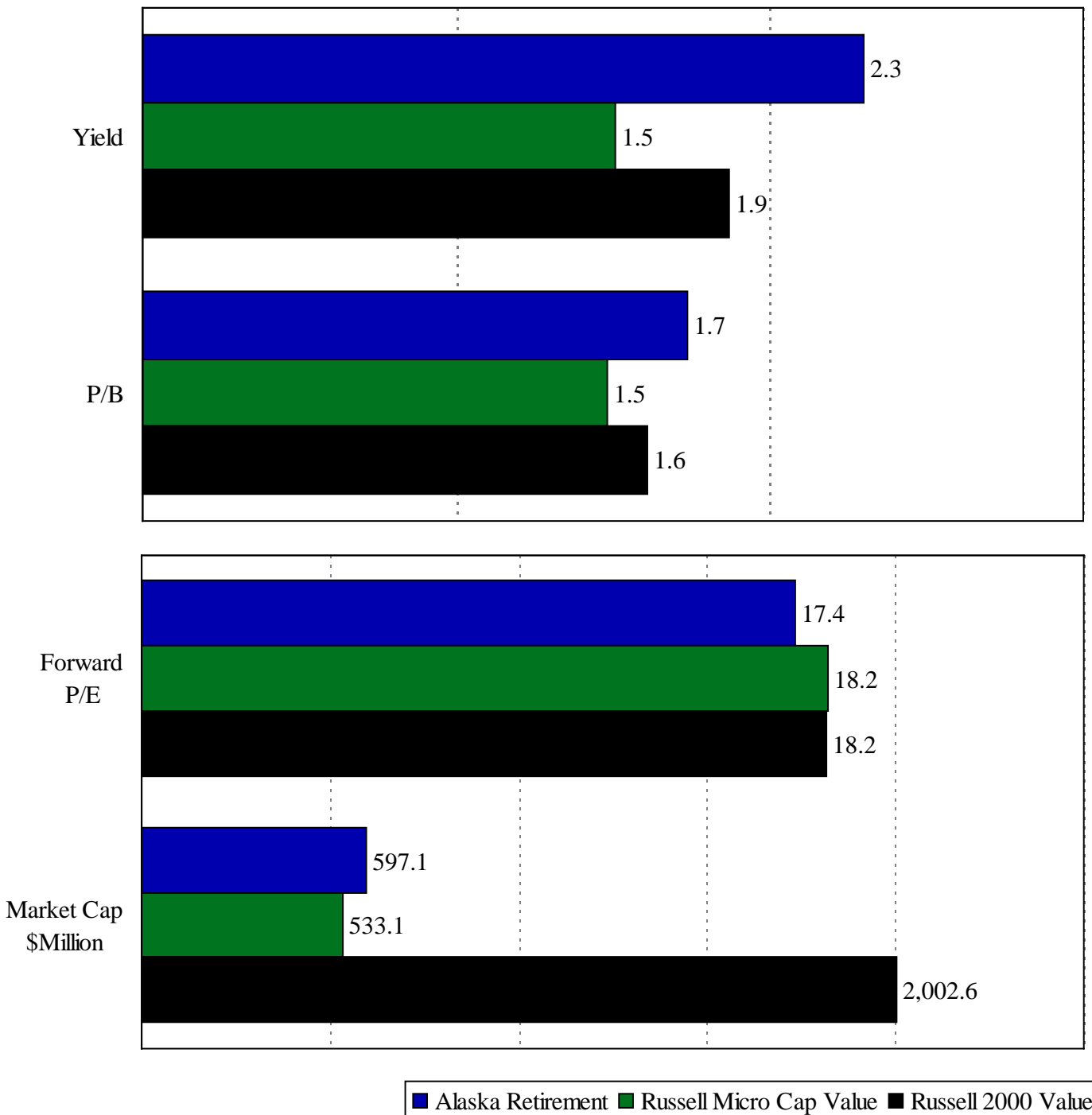
*The Russell Micro Cap Value Index inception June 2006

Calendar Year Performance



December 31, 2016

Alaska Retirement Management Board



December 31, 2016

Alaska Retirement Management Board

	<u>Sector</u>	<u>%Portfolio</u>	<u>Yield</u>
Alon U.S.A. Energy Inc.	Energy	2.7	5.3
Park Sterling Corp.	Financials	2.4	1.5
United Financial Bancorp Inc.	Financials	2.4	2.6
CatchMark Timber Trust Inc.	Real Estate	2.4	4.8
Aceto Corp.	Health Care	2.3	1.2
TriCo Bancshares	Financials	2.2	1.8
Cohu Inc.	Information Technology	2.2	1.7
Calgon Carbon Corp.	Materials	2.2	1.2
Southwest Bancorp Inc.	Financials	2.1	1.1
Kforce Inc.	Industrials	2.1	2.1

TriCo Bancshares, TCBK

Overview:

TriCo Bancshares is a bank holding company with \$4 Billion in assets operating 70 branches throughout Northern and Central California. The bank offers financial services and provides a diversified line of products and services to both consumers and businesses.

Dividend Yield: 1.80%

Market Capitalization: \$770 Million

Relative Valuation:

We value TCBK on a relative P/B range of 0.60 – 1.00 vs. the S&P 600. We determine the range by linking our historical valuation analysis with our fundamental research. The stock is a candidate for purchase when the expected upside versus downside is two to one. We purchased TCBK when it was trading at the lower end of its relative P/B range.

Fundamental Catalysts:

- TCBK is using excess capital to grow loans and return capital to shareholders through dividends and potential share repurchases.
- The company is leveraging new investments in technology to drive the efficiency ratio lower.
- Loan demand continues to improve, and the company has a strong pipeline. We expect TCBK to generate strong loan growth in 2017.
- Cash and securities represent 33% of assets. As excess cash is deployed into higher yielding loans, we expect profitability to improve.

Kforce Inc., KFRC

Overview:

Kforce is a U.S. centric, full service staffing firm providing flexible and permanent staffing solutions. The company specializes in project based activities within the technology, financial, and health care industries.

Dividend Yield: 2.10%

Market Capitalization: \$630 Million

Relative Valuation:

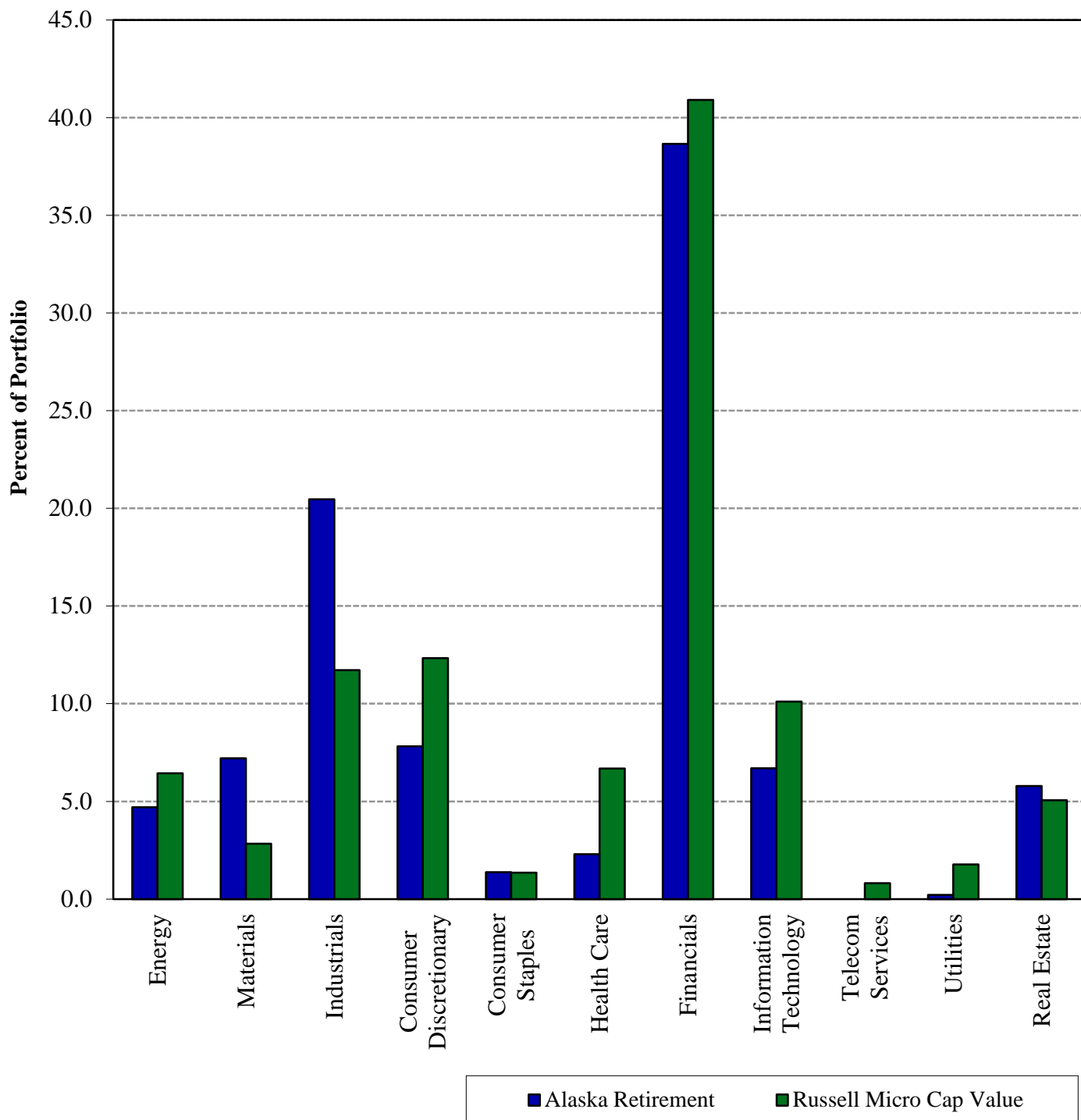
We value KFRC on a relative P/E range of 0.55 – 1.00 vs. the S&P 600. We determine the range by linking our historical valuation analysis with our fundamental research. The stock is a candidate for purchase when the expected upside versus downside is two to one. We purchased KFRC when it was trading at the lower end of its relative P/E range.

Fundamental Catalysts:

- Veterans Affairs Next Generation: The VA awarded KFRC prime contractor status on the VA T4NG contract, a multi-year, multi-vendor award totaling \$22 Billion.
- We expect significant consultant hiring in 2015 and 2016 to drive revenue growth and margin expansion going forward.
- Financial Services: We believe the company's large exposure to financial service firms will be beneficial in light of the more favorable interest rate and regulatory environment we foresee in 2017 and 2018.

December 31, 2016

Alaska Retirement Management Board



DePrince, Race & Zollo, Inc.
PORTFOLIO APPRAISAL
State of Alaska - Micro cap
AY4E
December 31, 2016

Quantity	Security	Unit Cost	Total Cost	Price	Market Value	Pct. Assets	Cur. Yield
Cash & Equivalents							
	Short Term Investment Fund		4,831,304		4,831,304	4.7	1.0
			4,831,304		4,831,304	4.7	1.0
U.S. Common Stock							
Energy							
24,812	ADAMS RES & ENERGY INC COM NEW	42.34	1,050,488	39.65	983,796	1.0	2.2
240,217	ALON USA ENERGY INC COM	6.95	1,669,362	11.38	2,733,669	2.7	5.3
46,915	DELEK US HLDGS INC	15.31	718,432	24.07	1,129,244	1.1	2.5
			3,438,283		4,846,709	4.7	4.0
Materials							
130,832	CALGON CARBON CORP COM	14.39	1,883,238	17.00	2,224,144	2.2	1.2
26,162	HAWKINS INC COM	39.67	1,037,959	53.95	1,411,440	1.4	1.6
20,671	HAYNES INTERNATL INC COM NEW	44.70	923,996	42.99	888,646	0.9	2.0
39,052	KRONOS WORLDWIDE INC COM	5.66	221,023	11.94	466,281	0.5	5.0
37,827	SCHULMAN A INC	25.07	948,162	33.45	1,265,313	1.2	2.5
107,131	SYNALLOY CP DEL COM	12.92	1,384,257	10.95	1,173,084	1.1	2.7
			6,398,635		7,428,909	7.2	2.1
Industrials							
38,794	AAR CORP	22.54	874,553	33.05	1,282,142	1.2	0.9
39,383	DMC GLOBAL INC	12.41	488,675	15.85	624,221	0.6	0.5
65,932	GRAHAM CORP COM	21.31	1,405,008	22.15	1,460,394	1.4	1.6
62,756	H&E EQUIPMENT	16.18	1,015,396	23.25	1,459,077	1.4	4.7
39,751	HURCO COMPANIES INC COM	29.23	1,161,961	33.10	1,315,758	1.3	1.1
93,631	KFORCE INC COM	18.23	1,707,232	23.10	2,162,876	2.1	2.1
94,057	KIMBALL INTL INC CL B	11.35	1,067,672	17.56	1,651,641	1.6	1.4
118,782	LSI INDS INC	9.66	1,147,079	9.74	1,156,937	1.1	2.1
187,620	LUXFER HLDGS PLC SPONSORED ADR	10.86	2,038,312	10.89	2,043,182	2.0	4.6
45,872	MCGRATH RENTCORP COM	28.81	1,321,759	39.19	1,797,724	1.7	2.6
37,842	MTS SYS CORP COM	44.12	1,669,688	56.70	2,145,641	2.1	2.1
56,877	PRIMORIS SVCS CORP COM	17.21	978,981	22.78	1,295,658	1.3	1.0
80,990	RESOURCES CONNECTION I COM	14.79	1,198,163	19.25	1,559,058	1.5	2.3
28,062	SUN HYDRAULICS CORP COM	29.69	833,045	39.97	1,121,638	1.1	0.9
			16,907,524		21,075,945	20.5	2.2

DePrince, Race & Zollo, Inc.
PORTFOLIO APPRAISAL
State of Alaska - Micro cap
AY4E
December 31, 2016

Quantity	Security	Unit Cost	Total Cost	Price	Market Value	Pct. Assets	Cur. Yield
Consumer Discretionary							
112,190	CLUBCORP HLDGS INC COM	13.05	1,464,061	14.35	1,609,927	1.6	3.6
195,308	ENTRAVISION COMMUNICAT CL A	7.16	1,398,072	7.00	1,367,156	1.3	1.8
84,313	FINISH LINE INC CL A	19.74	1,664,175	18.81	1,585,928	1.5	2.3
92,879	LIBBEY INC COM	17.68	1,642,072	19.46	1,807,425	1.8	2.4
13,647	OXFORD INDS INC COM	60.10	820,208	60.13	820,594	0.8	1.8
27,588	WEYCO GROUP INC COM	24.52	676,560	31.30	863,504	0.8	2.7
			7,665,148		8,054,534	7.8	2.5
Consumer Staples							
18,757	ANDERSONS INC	30.98	581,092	44.70	838,438	0.8	1.4
15,618	LIMONEIRA CO COM	13.61	212,506	21.51	335,943	0.3	0.7
7,633	VILLAGE SUPER MKT INC CL A NEW	24.89	190,007	30.90	235,860	0.2	3.2
			983,605		1,410,241	1.4	1.6
Health Care							
107,385	ACETO CORP	21.30	2,287,258	21.97	2,359,248	2.3	1.2
			2,287,258		2,359,248	2.3	1.2
Financials							
41,572	BALDWIN & LYONS INC CL B	25.14	1,045,130	25.20	1,047,614	1.0	4.1
37,000	BANC CALIF INC COM	13.00	480,889	17.35	641,950	0.6	3.0
126,081	BANKFINANCIAL CORP COM	12.24	1,543,856	14.82	1,868,520	1.8	1.6
44,937	BROOKLINE BANCORP INC COM	9.71	436,539	16.40	736,967	0.7	2.2
47,942	BRYN MAWR BK CORP COM	27.96	1,340,240	42.15	2,020,755	2.0	2.0
6,057	CAPITAL CITY BK GROUP COM	19.87	120,334	20.48	124,047	0.1	1.0
17,723	CODORUS VY BANCORP INC COM	18.94	335,602	28.60	506,878	0.5	1.9
59,695	DONEGAL GROUP INC CL A	13.84	826,087	17.48	1,043,469	1.0	3.2
44,593	EAGLE BANCORP MONT INC COM	10.94	487,698	21.10	940,912	0.9	1.5
25,501	EASTERN VA BANKSHS INC COM	8.21	209,340	10.45	266,485	0.3	1.1
27,379	ENTERPRISE FINL SVCS COM	20.11	550,708	43.00	1,177,297	1.1	1.0
12,402	FIRST BANCORP INC ME COM	16.27	201,836	33.10	410,506	0.4	2.8
115,171	HOPFED BANCORP INC COM	12.06	1,389,042	13.46	1,550,202	1.5	1.2
15,882	HORIZON BANCORP IND COM	16.38	260,103	28.00	444,696	0.4	1.6
75,279	INDEPENDENT BANK CORP	12.43	936,055	21.70	1,633,554	1.6	1.8

December 31, 2016

15

DePrince, Race & Zollo, Inc.
PORTFOLIO APPRAISAL
State of Alaska - Micro cap
AY4E
December 31, 2016

Quantity	Security	Unit Cost	Total Cost	Price	Market Value	Pct. Assets	Cur. Yield
Utilities							
6,869	ARTESIAN RES CORP CL A	22.33	153,377	31.94	219,396	0.2	2.9
			<hr/> 153,377		<hr/> 219,396	<hr/> 0.2	<hr/> 2.9
Real Estate							
65,142	ARMADA HOFFLER PPTYS I	10.50	683,772	14.57	949,119	0.9	4.9
217,916	CATCHMARK TIMBER TR IN CL A	12.36	2,694,007	11.26	2,453,734	2.4	4.8
184,564	CEDAR REALTY TRUST INC COM	7.54	1,391,120	6.53	1,205,203	1.2	3.1
61,486	NATIONAL STORAGE AFFIL COM SHS BEN IN	19.42	1,193,971	22.07	1,356,996	1.3	4.3
			<hr/> 5,962,870		<hr/> 5,965,052	<hr/> 5.8	<hr/> 4.4
	U.S. Common Stock Total		<hr/> 78,758,337		<hr/> 98,071,799	<hr/> 95.3	<hr/> 2.4
TOTAL PORTFOLIO			83,589,641		102,903,103	100.0	2.3

DePrince, Race & Zollo, Inc.

MICRO CAP VALUE COMPOSITE

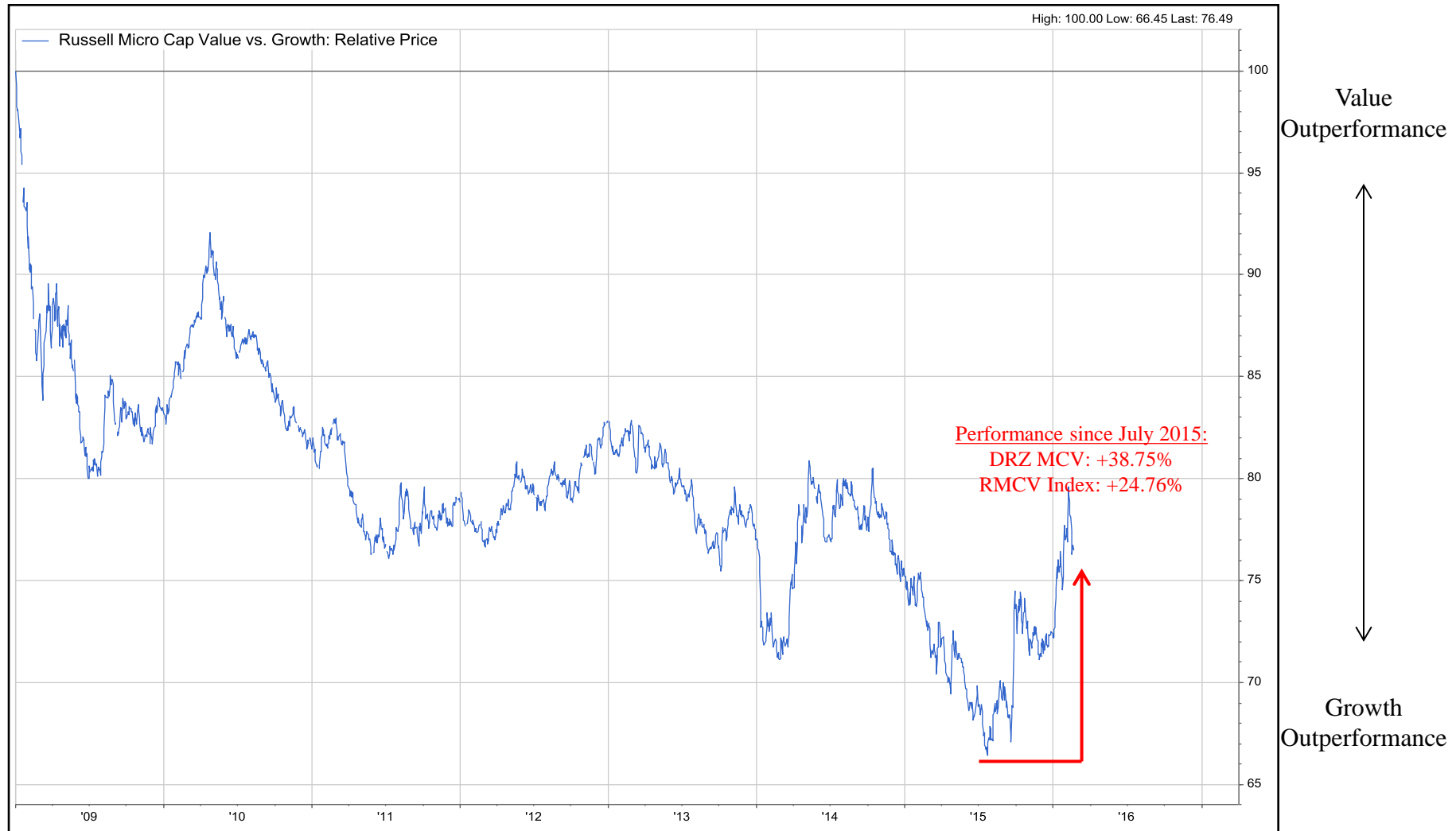
September 30, 1997 through December 31, 2016

Year	Gross Return(%)	Net Return(%)	Index Return(%)	Composite 3- Year Annualized Standard Deviation	Index 3- Year Annualized Standard Deviation	Number of Portfolios	Composite Dispersion(%)	Total Composite Assets (\$millions)	Percentage of Firm Assets
2016	46.43	45.02	30.59	15.84%	15.95%	7	0.07	461	8.29%
2015	(9.65)	(10.55)	(6.45)	13.29%	13.56%	7	0.01	317	5.49%
2014	(0.55)	(1.78)	3.15	13.57%	13.41%	11	0.06	451	5.72%
2013	30.78	29.19	41.17	15.52%	16.46%	13	0.06	586	6.88%
2012	14.89	13.48	22.81	19.26%	21.32%	16	0.03	458	6.76%
2011	(4.43)	(5.62)	(10.33)	25.31%	26.05%	18	0.11	472	7.17%
2010	28.34	26.77	28.35			13	0.18	345	5.92%
2009	34.19	32.67	17.52			7	N/A	140	2.87%
2008	(27.77)	(28.51)	(34.93)			7	N/A	87	2.79%
2007	(3.07)	(4.04)	(13.13)			8	N/A	133	2.58%
2006	29.77	28.51	23.48			≤5	N/A	117	2.18%
2005	1.87	0.86	4.71			6	N/A	93	1.89%
2004	28.08	26.83	22.25			≤5	N/A	68	1.50%
2003	34.21	32.90	46.03			≤5	N/A	76	2.25%
2002	(5.80)	(6.74)	(11.43)			≤5	N/A	97	4.69%
2001	26.17	24.93	14.02			≤5	N/A	72	3.99%
2000	26.21	24.98	22.83			≤5	N/A	16	0.89%
1999	10.44	9.34	(1.49)			≤5	N/A	16	0.92%
1998	(9.18)	(10.09)	(6.45)			≤5	N/A	13	0.59%
09/30/97-12/31/97	1.94	1.69	1.68			≤5	N/A	3	0.13%

DePrince, Race & Zollo, Inc. has presented this report in compliance with the Global Investment Performance Standards (GIPS®).

- DePrince, Race & Zollo Inc. (DRZ) is an independent investment management firm, founded in 1995, that manages equity portfolios primarily for U.S. institutional clients.
- DRZ claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. DRZ has been independently verified for the periods March 31, 1995 through December 31, 2015 by The Spaulding Group. The verification report is available upon request. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Verification does not ensure the accuracy of any specific composite presentation.
- Accounts that experience cash flows of 10% or more will be temporary removed from the composite for one month. Additional information regarding the firm's policies for valuing portfolios, calculating performance, and preparing compliant presentations are available upon request.
- The composite invests in U.S. stocks, ADRs, and foreign domiciled stocks traded in US dollars on the major US exchanges that generally have the following characteristics; a dividend yield generally above 1% and a market capitalization that does not exceed the largest market capitalization in the Russell Micro-Cap Value Index.
- Past performance is not indicative of future results. The actual return and value of an account will fluctuate and at any point could be worth more or less than the amount invested. Individual account performance will vary according to individual client investment objectives.
- The benchmark is the Russell Microcap Value Index which measures the performance of the microcap value segment of the U.S. Equity market. It includes those Russell Microcap Index companies with lower price-to-book ratios and lower forecasted growth values. This index is utilized to allow for comparison of the strategy's performance to that of well-known and widely recognized index. Prior to January 2007 the composite was measured against the Russell 2000 Value index, which was changed to more accurately represent the composite strategy.
- Total time-weighted rates of return are expressed in US dollars. Computations include the reinvestment of all dividends and capital gains. For investments in ADRs and foreign domiciled companies, dividends are included net of any withholding taxes.
- The composite was created in October 1997. DRZ's list of composite descriptions is available upon request. This composite requires a minimum asset level of \$1,000,000 (one million dollars) for inclusion.
- Net performance returns are calculated by deducting the highest investment advisory fee.
- DRZ's standard fee schedule for Micro Cap Value is 1.00% on all amounts.
- Internal dispersion is calculated using the equal-weighted standard deviation of annual gross returns of those portfolios that were included in the composite for the entire year; it is not presented for periods with 5 or fewer portfolios. The three-year annualized ex-post standard deviation measures the variability of the composite and the benchmark returns over the preceding 36 months period. The three-year ex-post standard deviation is not required for periods prior to 2011.
- All information contained in this document is provided for informational purposes only and should not be deemed as a recommendation to buy the securities mentioned. The securities highlighted in this document, if any, represent recent holdings. Each quarter, DRZ uses the same objective, non-performance based criteria to select these securities. It should not be assumed that recommendations made in the future will be profitable or will equal the performance of the securities discussed in this report.
- If clients are listed in this document, it is not known they approve or disapprove of DRZ or the advisory services it provides. If included, the representative clients listed in this document are a cross section of current accounts that may or may not maintain similar investment objectives as those expressed by DRZ's prospective clients. This list may include accounts that are not invested in the investment strategy described in this document.
- Frank Russell Company is the source and owner of Russell Index data reflected in this material and all trademarks and copyrights related thereto. Unauthorized use, disclosure, copying or redistribution of such data is prohibited. Frank Russell Company is not responsible for the formatting or configuration of this material or for any inaccuracy in this presentation.

Value Returns to Favor



- Since Value's rally began mid-2015, we've added over +1370bps in relative performance.
- We continue to believe we're in the early innings of a rebound for Value stocks as the group remains well below their 10-year mean vs. Growth.

Value Returns to Favor

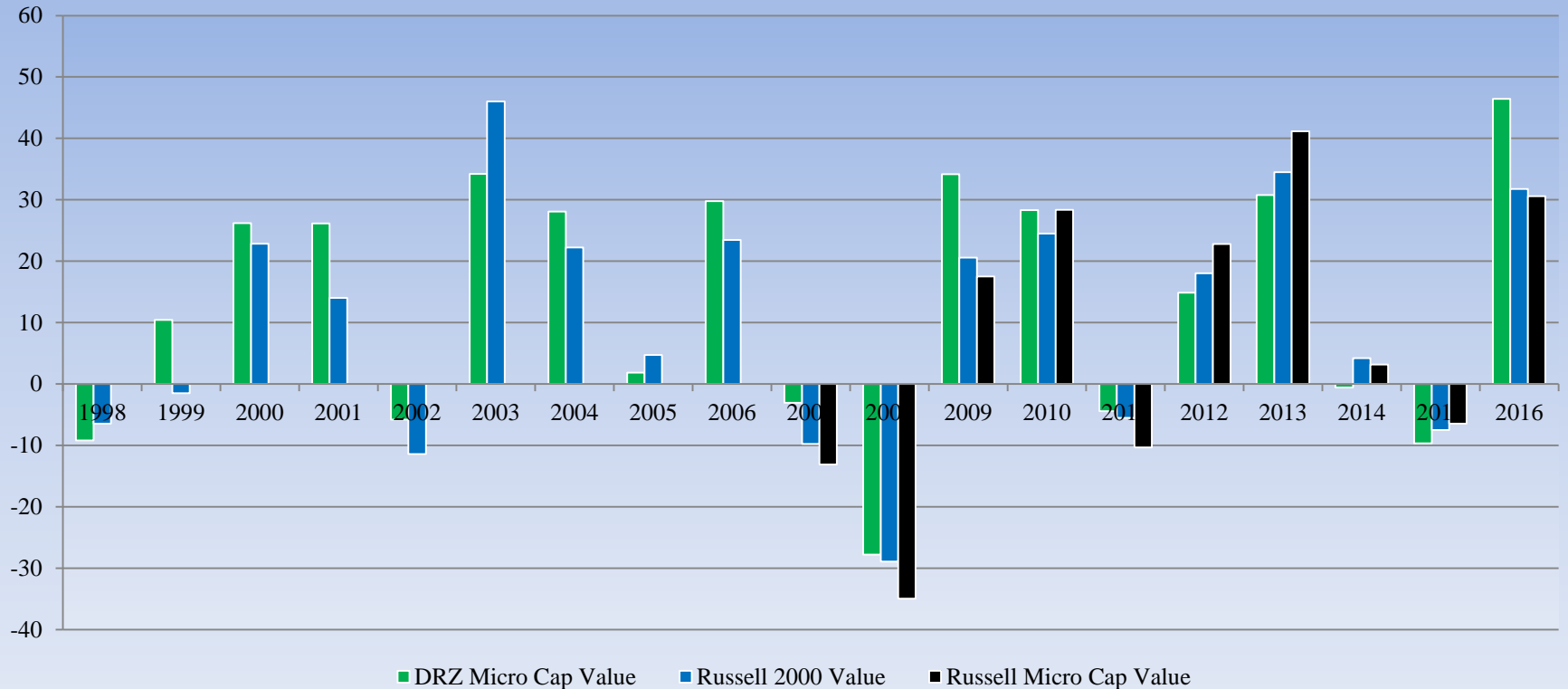


DRZ Outperforms Long Term

Annualized Return since Inception:

DRZ Micro-Cap Value: +11.63%

Russell 2000 Value: +8.63%

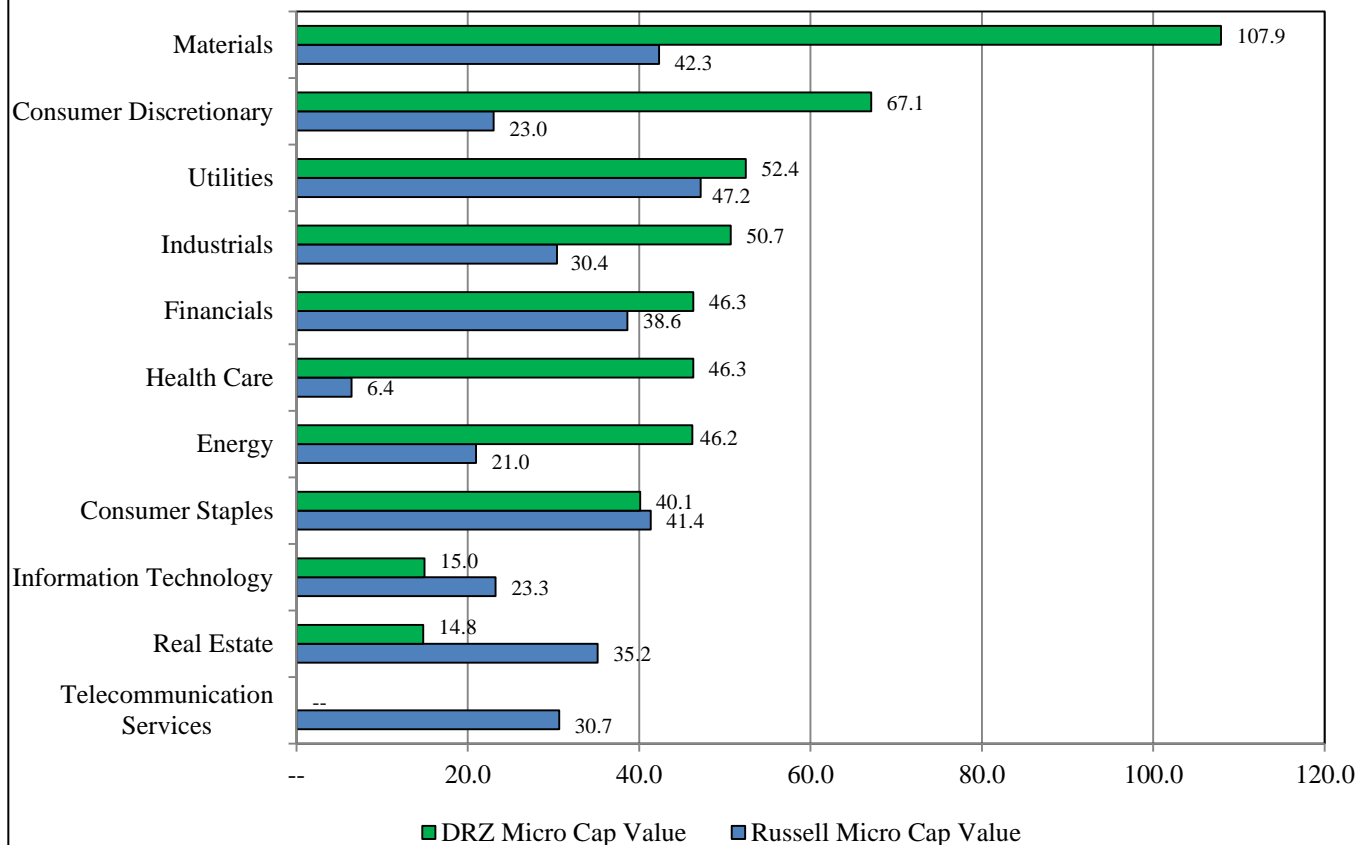


- The QE environment during the 4 years leading up to 2016 proved challenging for our Value Methodology. Within the Russell Micro Cap Value Index, performance was bifurcated as speculative, money-losing companies and expensively valued Defensives dominated the space.
- During 2016, we experienced a dramatic improvement in relative performance as attractively valued Micro Cap stocks returned to favor.
- Since the Russell Micro Cap Value Index's inception in May 2006:
 - DRZ Micro Cap Value: +9.77%
 - Russell Micro Cap Value: +6.07%

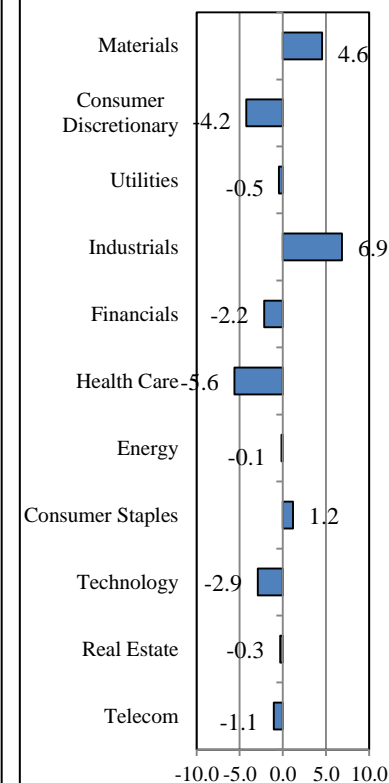
2016: Where We Outperformed



Year to Date Return by Sector



Average Overweight/Underweight



- A majority of the Portfolio's outperformance was driven by stock selection within attractively valued Cyclical sectors.
- We had a few opportunities to own attractively valued Health Care and Utilities stocks in 2016, which contributed to performance.

Zebra Capital Management LLC

Mandate: Micro Cap

Hired: 2015

Firm Information	Investment Approach	Total ARMB Mandate
<p>Zebra Capital Management (“ZCM”) is a SEC registered, independent asset management firm which manages global, equity focused investment strategies. ZCM was founded in 2001 by Roger Ibbotson.</p> <p>As of 12/31/2016, Zebra’s total assets under management were \$1.2 billion.</p> <p>Key Executives: Roger G. Ibbotson, <i>Chairman & CIO</i> John J. Holmgren, Jr., <i>President & COO</i></p>	<p>The Zebra US Micro Cap Strategy utilizes a Behavioral Finance derived approach. Zebra seeks to identify securities that are less popular yet fundamentally strong via a systematic and disciplined application of its investment philosophy. Zebra’s investment philosophy is derived from original research that has shown that over time, less popular fundamentally strong companies outperform the broad market. Zebra’s investment approach begins with a universe that is based upon the benchmark index that is then filtered for liquidity and data integrity. Zebra then applies its algorithms to identify less popular fundamentally strong securities within each sector. Sectors are constrained to roughly benchmark weight at rebalance while the individual security positions are weighted by relative fundamentals. The portfolio may be viewed as pro-fundamental and anti-glamour.</p> <p>Benchmark: Russell Micro Cap Index</p>	<p>Assets Under Management: 12/31/2016: \$93 Million</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>
Zebra Micro Cap	15.34%	30.61%	N/A	N/A
Russell Micro Cap Index	10.03%	20.32%		



zebra

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Milford, Connecticut 06461
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Fax: 203.878.1113
www.zebracapital.com



Zebra Capital Management, LLC

US Micro Cap Equity

ARMB

March 2nd 2017

Roger G. Ibbotson

Chairman & CIO

John J. Holmgren, Jr.

President & COO

Agenda

Zebra Capital Firm Update	3
Macro Overview	7
Strategy Overview	10
Performance, Attribution & Portfolio Characteristics	14
Appendices	21

Zebra Capital Firm Update

2016 Firm Developments

During 2016...

- Most of ZCM's strategies outperformed their respective benchmarks
- ZCM's research continued in:
 - Development of new popularity signals
 - Application of the signals via portfolio construction algorithms
 - Enhanced trading and implementation techniques
- ZCM's AUM grew to \$1.2 billion
- ZCM had no change in personnel

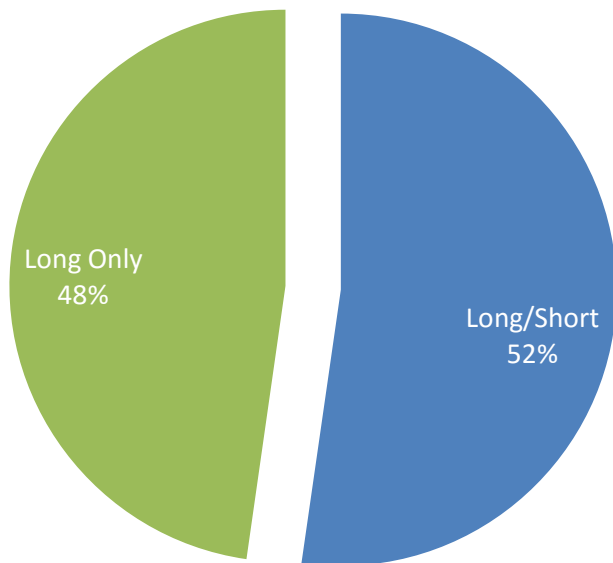
Zebra Capital Management, LLC

Strategy & Investor Breakdown

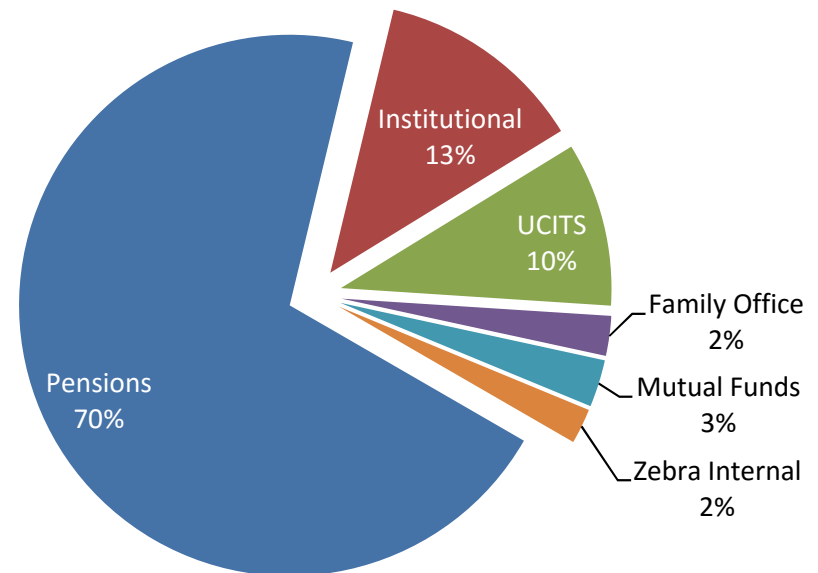
As of December 31st 2016



\$1.2 Billion AUM



AUM By Strategy



AUM By Investor Type

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

Zebra Capital Management, LLC



Core Investment Strategies

Performance from inception through December 2016

	Active Long Only			Absolute Return	
Strategy	Zebra Japan Liquidity Return Asset Weighted Composite	Zebra US Small Cap Equity Strategy	Zebra US Micro Cap	Zebra Global Equity Beta Neutral	Zebra Global Equity Advantage Beta Neutral
Performance	Actual Gross JPY	Actual Net USD	Actual Gross USD	Actual Net USD	Actual Net USD
Performance Inception Date	March 2010	June 2010	July 2015	June 2010	June 2015
Strategy AUM (USD)	\$ 448 M	\$ 34 M	\$ 93 M	\$ 509 M	\$ 120 M
Annualized Return	11.27%	14.99%	15.36%	6.49%	6.21%
Standard Deviation	15.81%	15.88%	17.38%	5.47%	10.90%
Benchmark	TOPIX TR	Russell 2000 TR	Russell Microcap TR	Cash (T Bills)	Cash (T Bills)
Beta	0.82	0.89	0.87	0.06 (MSCI World)	-
Annualized Excess Return	0.86%	1.91%	10.33%	6.61% (T Bills)	5.97% (T Bills)
Annualized Alpha	2.51%	3.02%	10.40%	6.04% (MSCI World)	7.13% (MSCI World)

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

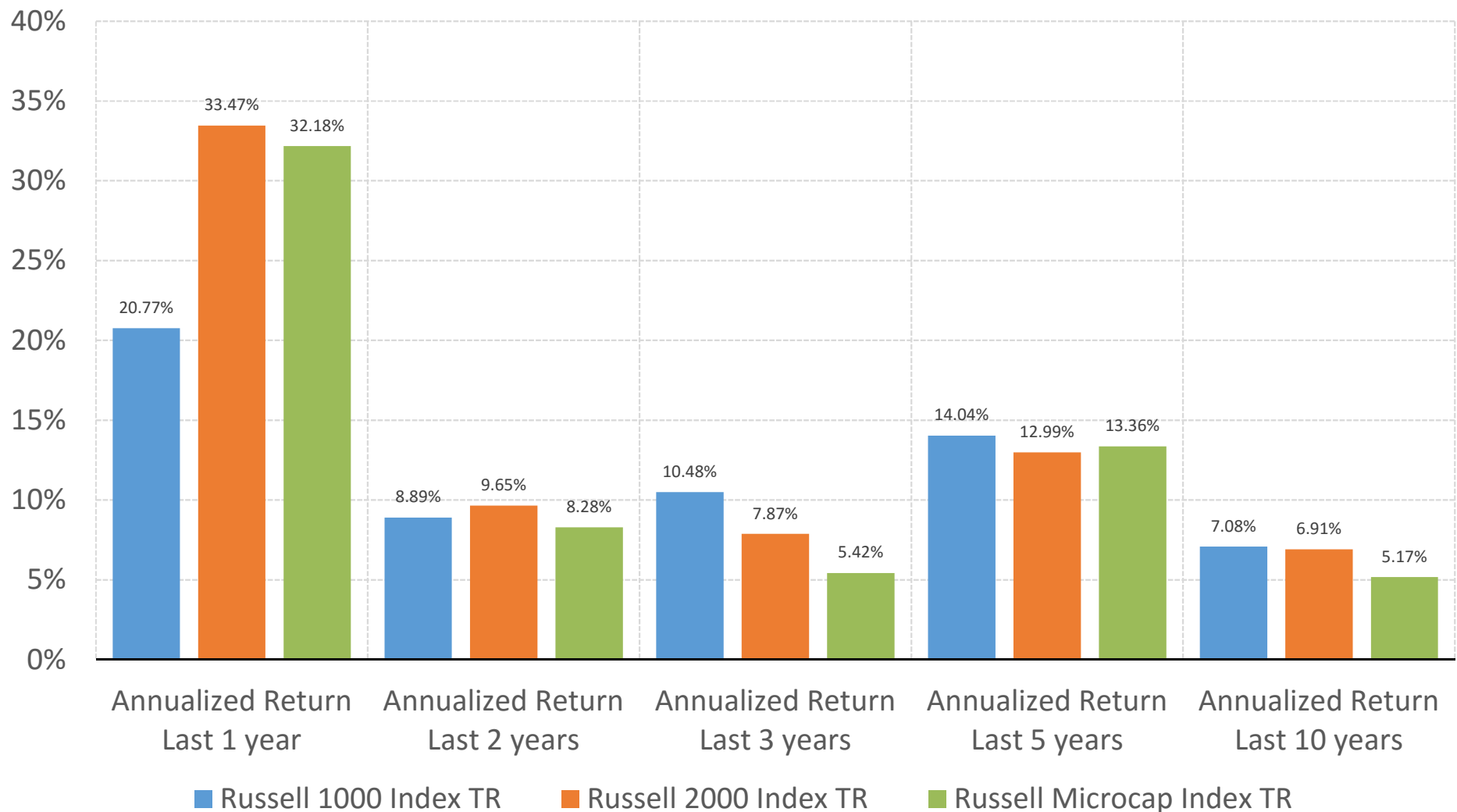
See Appendix "Performance Disclosures & Notes"

Macro Overview

US Micro Cap Equities

Recent Performance

2007 - 2016



PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

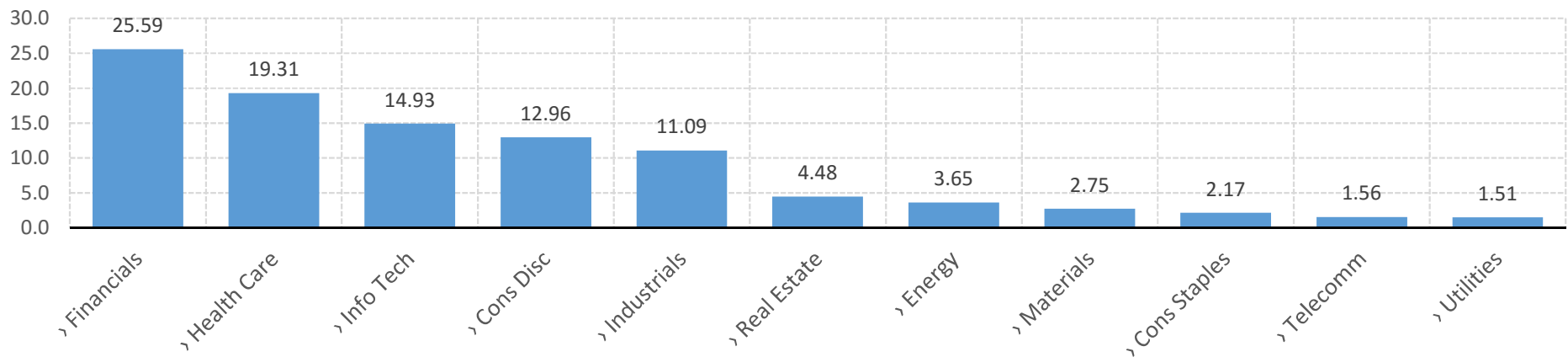
Russell Micro Cap Index

Sector Weights & Returns

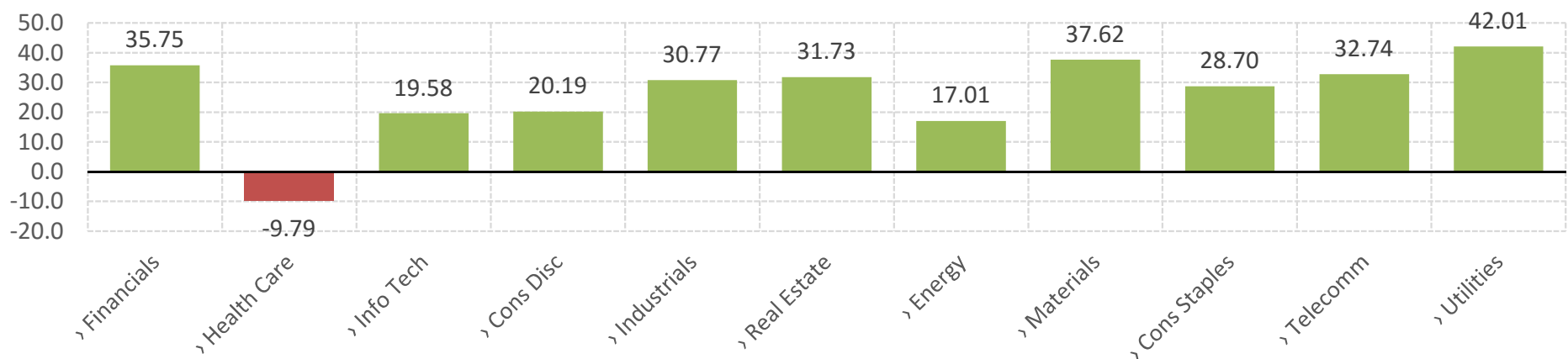
2016

zebra

Average Sector Weights



Sector Return



PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

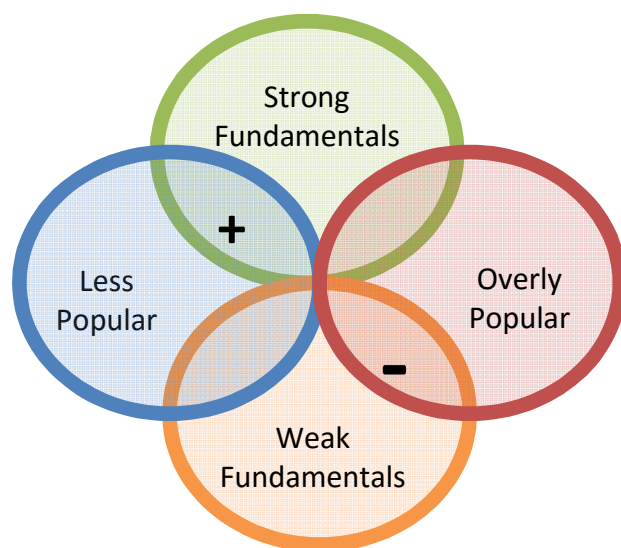
Strategy Overview

Zebra Capital Management

Conceptual Framework



Fundamentally strong, less popular stocks tend to outperform fundamentally weak, more popular stocks.



+ Long/Overweight

- Short/Underweight

US Equities, Top 3,500 by Market Cap
Popularity vs Fundamentals
Annualized Return
(1972-2016)

		Popularity				Popularity Premium (Low-High)
		Low			High	
Fundamentals	Strong	19.1%	16.8%	16.1%	10.1%	+9.0%
		15.5%	14.7%	13.0%	12.0%	+3.6%
		13.1%	12.5%	10.5%	6.9%	+6.3%
	Weak	10.4%	12.2%	9.0%	2.6%	+7.8%
Fundamental Premium (Strong- Weak)		+8.7%	+4.6%	+7.1%	+7.5%	

Source: Ibbotson & Kim, "Liquidity as an Investment Style: 2017 Update" [Ibbotson, Chen, Kim & Hu, FAJ 2013], available at zebracapital.com

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

Popularity vs. Size

US Equities, Top 3,500 by Market Cap, Annualized Return
1972 – 2016

			Popularity				Popularity Premium (Low-High)
			Low		High		
Size	Micro	Geo. Avg.	16.0%	15.7%	9.7%	−0.3%	+16.3%
		Std. Dev.	22.9%	28.8%	34.9%	33.4%	
		Avg. n	342	182	125	98	
	Small	Geo. Avg.	15.7%	14.4%	12.2%	5.8%	+9.9%
		Std. Dev.	19.6%	24.0%	27.2%	30.4%	
		Avg. n	198	201	174	175	
	Mid	Geo. Avg.	14.2%	13.9%	12.7%	8.1%	+6.0%
		Std. Dev.	17.7%	19.7%	21.8%	27.6%	
		Avg. n	131	177	202	237	
	Large	Geo. Avg.	11.2%	12.1%	11.8%	8.9%	+2.3%
		Std. Dev.	16.3%	15.5%	17.8%	24.8%	
		Avg. n	75	188	247	237	

Popularity has dominated size as a predictor of returns.

Size Premium (Micro – Large)	+4.8%	+3.6%	-2.1%	-9.2%
---------------------------------	-------	-------	-------	-------

Source: Ibbotson & Kim, "Liquidity as an Investment Style: 2017 Update" [Ibbotson, Chen, Kim & Hu, FAJ 2013], available at research.zebracapital.com

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

Zebra US Micro Cap Equity

- **Objective**

- Generate consistent excess returns with lower beta and volatility than the benchmark index.

- **Strategy Overview**

- **Return objective:** >2% annualized excess return relative to the benchmark index over a market cycle
- **Volatility objective:** < 100% of benchmark index
- **Beta Target:** < 1.0 relative to benchmark index
- **Typical Leverage:** none
- **Avg. Expected Turnover:** ~ 100% per annum
- **Focus:** Micro Cap Equities with minimum liquidity threshold

- **Strategy Characteristics**

- The Zebra strategy is the implementation of academic and proprietary research
- Systematic use of proprietary behavioral and fundamental metrics
- The portfolio construction process is designed to maximize intended relative characteristics while controlling risk
- The unique nature of Zebra's strategy leads to portfolios that tend to be relatively non-correlated with other investment strategies

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

Performance, Attribution & Portfolio Characteristics

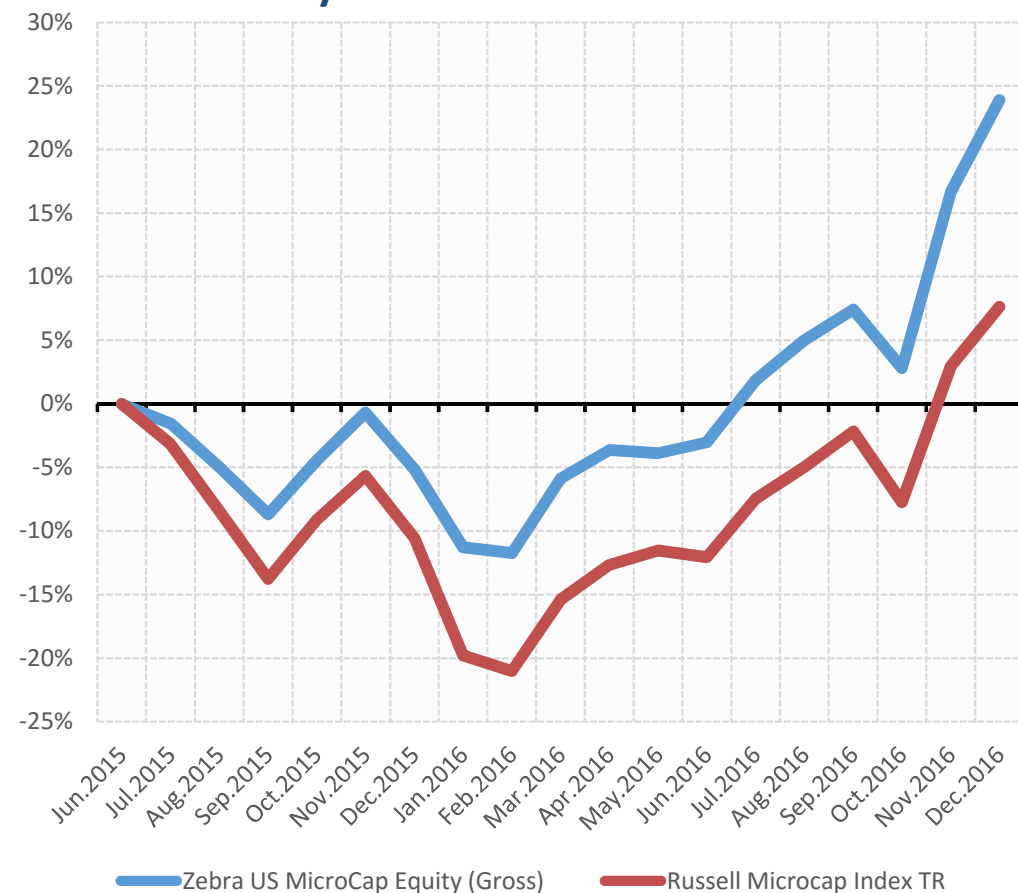
Zebra US Micro Cap Equity

USD Gross Performance

July 2015 – December 2016



Cumulative Return
July 2015 – December 2016



	Zebra US Micro Cap	Russell Micro Cap	+/-
Annualized Return	15.36%	5.03%	10.33%
Standard Deviation	17.38%	19.54%	-2.16%
Beta	0.87	1	-0.13
Annual Outperformance	10.33%	-	-
Tracking Error	4.70%	-	-
Information Ratio	2.20	-	-
Annualized Alpha	10.40%	-	-

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

Zebra US Micro Cap Equity

USD Gross Performance

July 2015 – December 2016



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
2016	-6.46%	-0.53%	6.66%	2.36%	-0.25%	0.89%	5.04%	3.08%	2.30%	-4.29%	13.49%	6.19%
2015							-1.53%	-3.50%	-3.91%	4.67%	3.92%	-4.49%

Zebra US Micro Cap Equity	Russell Micro Cap	+/-
30.61	20.32	10.29
-5.14	-10.54	5.40

Zebra US Micro Cap Equity	Russell Micro Cap	+/-
27.76	22.40	5.37
30.61	20.32	10.29

July 2015 – Dec 2016

	Zebra US Micro Cap Equity	Russell Micro Cap	+/-
Annualized Return	15.36	5.03	10.33
Standard Deviation	17.38	19.54	-2.16
Return to Risk	0.88	0.22	0.63
Realized Beta	0.87	1	-0.13

December 2016

Trailing 6 Month Return
Trailing 1 Year Ann. Return

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

Zebra US Micro Cap Equity

USD Gross Relative Performance

July 2015 – December 2016



	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Zebra US Micro Cap Equity	Russell Micro Cap	+/-
2016	3.89%	0.99%	-0.43%	-0.88%	-1.55%	1.48%	-0.19%	0.38%	-0.64%	1.41%	1.90%	1.64%	30.61	20.32	10.29
2015							1.66%	1.90%	1.93%	-0.71%	0.12%	0.67%	-5.14	-10.54	5.40

July 2015 – Dec 2016	Zebra US Micro Cap Equity	Russell Micro Cap	+/-	December 2016	Zebra US Micro Cap Equity	Russell Micro Cap	+/-
Annualized Return	15.36	5.03	10.33	Trailing 6 Month Return	27.76	22.40	5.37
Standard Deviation	17.38	19.54	-2.16	Trailing 1 Year Ann. Return	30.61	20.32	10.29
Return to Risk	0.88	0.22	0.63				
Realized Beta	0.87	1	-0.13				

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

Zebra US Micro Cap Equity

USD Gross Performance

January 2016 – December 2016



Zebra US Microcap Strategy vs Russell Microcap Index

Source: Zebra Capital, Bloomberg, Russell

Total Return Brinson Attribution Model

12/31/15 - 12/31/16

	Zebra US Microcap			Russell Microcap			Variation			Attribution			
Sector	Avg Weight	Total Return	Contrib	Avg Weight	Total Return	Contrib	Avg Weight	Total Return	Contrib	Allocation	Selection	Interaction	Total Attribution
› Cash	0.86	-	-	-	-	-	0.86	-	-	(0.03)	-	-	(0.03)
› Consumer Discretionary	13.12	34.22	4.47	12.96	20.19	2.75	0.16	14.03	1.72	0.00	1.83	(0.05)	1.77
› Consumer Staples	2.57	65.93	1.54	2.17	28.70	0.58	0.40	37.23	0.96	0.01	0.75	0.07	0.83
› Energy	3.44	15.88	0.56	3.65	16.88	0.70	(0.21)	(1.00)	(0.15)	0.07	(0.01)	(0.11)	(0.04)
› Financials	28.97	44.83	12.35	25.59	35.75	8.50	3.38	9.08	3.86	0.33	2.14	0.20	2.67
› Health Care	20.10	7.25	1.33	19.31	(9.81)	(2.26)	0.80	17.05	3.59	(0.29)	4.26	0.10	4.07
› Industrials	10.36	35.74	3.81	11.09	30.77	3.47	(0.73)	4.96	0.35	(0.12)	0.54	(0.01)	0.42
› Information Technology	14.25	23.71	3.40	14.93	19.54	2.81	(0.68)	4.17	0.59	0.01	0.65	(0.01)	0.66
› Materials	2.78	48.90	1.21	2.75	37.62	0.99	0.04	11.28	0.22	(0.06)	0.32	(0.07)	0.20
› Real Estate	0.61	41.39	0.26	4.48	31.73	1.34	(3.87)	9.66	(1.08)	(0.44)	0.50	(0.48)	(0.42)
› Telecommunication Services	1.47	78.40	0.98	1.56	32.74	0.51	(0.09)	45.66	0.47	(0.10)	0.62	(0.09)	0.43
› Utilities	1.46	41.75	0.57	1.51	42.01	0.59	(0.04)	(0.26)	(0.01)	(0.04)	0.01	(0.01)	(0.03)
› Interaction Effects			0.12			0.35			(0.22)			(0.22)	(0.22)
ZE052400	100.00	30.61	30.61	100.00	20.32	20.32	-	10.29	10.29	(0.64)	11.61	(0.68)	10.29

- All of the excess return in 2016 came from positive stock selection.

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

Zebra US Micro Cap Equity

Median Portfolio Characteristics

December 30th, 2016



	Zebra US Micro Cap Equity	Russell Microcap	+/-
P/E	25.0	69.4	-44.4
P/B	2.3	1.9	0.4
Div Yld	0.0	0.0	0.0
ROA	3.4	0.2	3.2
ROE	8.6	0.0	8.6
Profit Margin	5.1	0.5	4.6

Source: Zebra Capital, Bloomberg. Median Ratio Calculation Methodology.

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See Appendix "Performance Disclosures & Notes"

Zebra US Micro Cap Equity

Sector Exposure

December 30th, 2016



	Zebra US Micro Cap Equity	Russell Microcap	+/-
› Cash	0.52		0.52
› Consumer Discretionary	13.88	12.93	0.95
› Consumer Staples	2.29	1.93	0.36
› Energy	4.41	4.42	-0.01
› Financials	25.74	27.37	-1.63
› Health Care	18.05	18.08	-0.03
› Industrials	12.10	11.67	0.43
› Information Technology	12.80	13.47	-0.66
› Materials	3.23	2.83	0.40
› Real Estate	4.38	4.37	0.00
› Telecommunication Services	1.00	1.34	-0.35
› Utilities	1.61	1.58	0.03

Source: Zebra Capital, Bloomberg.

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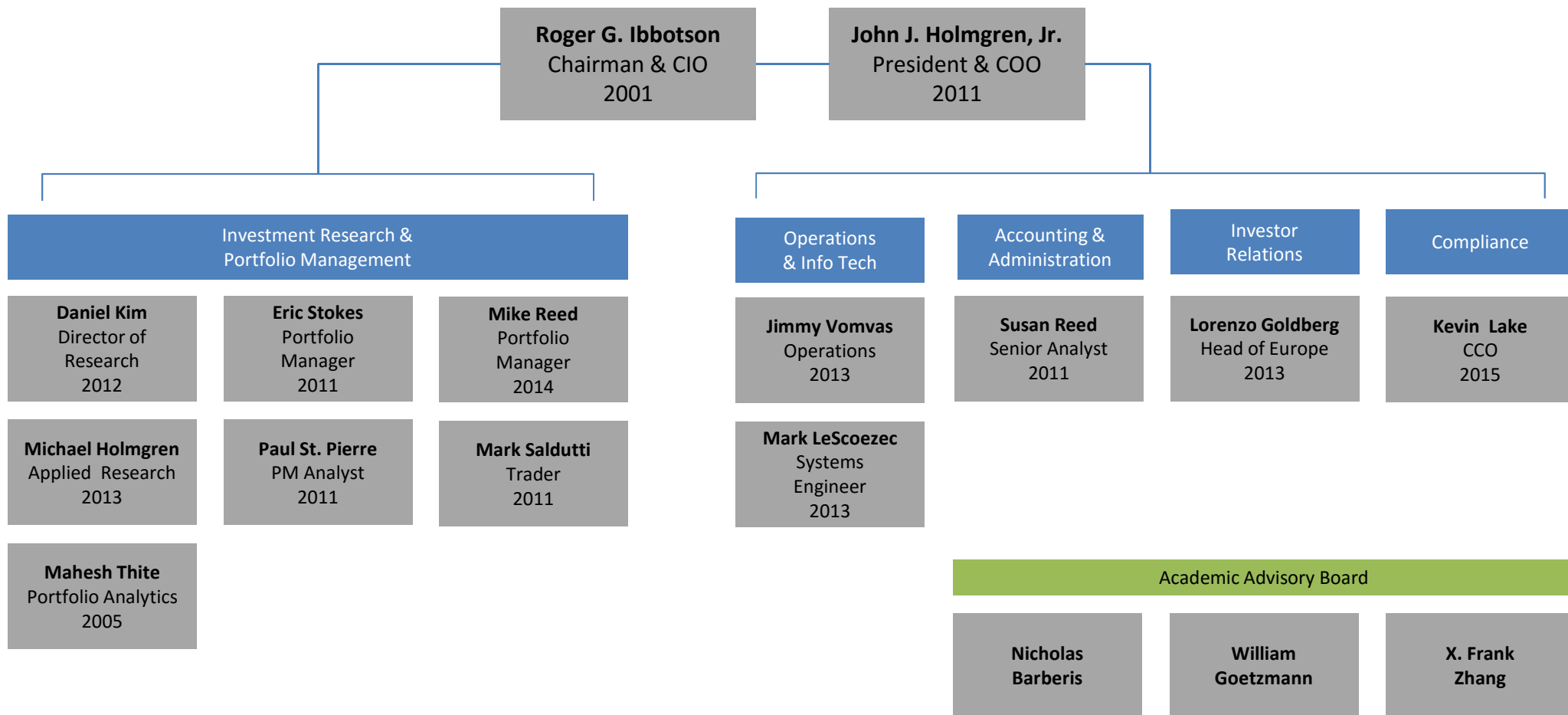
See Appendix "Performance Disclosures & Notes"

Appendices

- I Biographies
- II Performance Disclosures & Notes

Zebra Capital Management, LLC

Zebra Capital Management, LLC



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See Appendix "Performance Disclosures & Notes"

Roger G. Ibbotson, Ph.D.

Chairman & Chief Investment Officer

Roger Ibbotson is Chairman & Chief Investment Officer of Zebra Capital. He is a member of the Zebra Capital portfolio management team having served in this role since the firm was founded in 2001. He is also Professor in the Practice Emeritus of Finance at Yale School of Management. Professor Ibbotson is Founder and former Chairman of Ibbotson Associates, now a Morningstar Company with in excess of \$100 billion under advisement. He has written numerous books and articles including *Stocks, Bonds, Bills, and Inflation* with Rex Sinquefeld (updated annually) which serves as a standard reference for information on capital market returns.

Professor Ibbotson conducts research on a broad range of financial topics, including investment returns, mutual funds, international markets, portfolio management, and valuation. He has published *The Equity Risk Premium* with William Goetzmann and *Lifetime Financial Advice* with Milevsky, Chen, and Zhu. He has also co-authored two books with Gary Brinson, *Global Investing* and *Investment Markets*. In addition, he has co-authored a textbook with Jack Clark Francis, *Investments: A Global Approach*. He is a regular contributor and editorial board member to both trade and academic journals. He is the recipient of many awards including Graham and Dodd Scrolls in 1979, 1982, 1984, 2001, 2004, 2007, 2011, 2012, and best *Financial Analysts Journal* article of 2013. He received the Harry M. Markowitz Award for “Momentum, Acceleration, and Reversal”, the 2015 best paper in the *Journal of Investment Management*.



Professor Ibbotson served on numerous boards including Dimensional Fund Advisors' funds. He frequently speaks at universities, conferences, and other forums. He received his Bachelor's degree in mathematics from Purdue University, his M.B.A. from Indiana University, and his Ph.D. from the University of Chicago where he taught for more than ten years and served as Executive Director of the Center for Research in Security Prices.

PAST PERFORMANCE IS NO GUARANTEE OF FUTURE RESULTS.

See Appendix "Performance Disclosures & Notes"

John J. Holmgren, Jr.

President & COO



John J. Holmgren, Jr. joined Zebra Capital in 2011 as President and is responsible for the development, management and implementation of Zebra's business and strategies.

Mr. Holmgren was formerly President and CIO of HCM, a global investment management and research firm specializing in bottom up quantitative investment models, from 2007 until 2011. From 1999 through 2007, Mr. Holmgren was Chief Investment Officer and Chief Executive Officer of DSI International Management, a wholly owned subsidiary of UBS AG. He was responsible for managing the investment programs for DSI and integrating DSI within the UBS business organization. Mr. Holmgren was a UBS Managing Director and Regional Head where he sat on various UBS Global AM and O'Connor Investment, Risk and Management Committees. Mr. Holmgren joined DSI International Management, an investment advisor focusing on global quantitative risk controlled and long/short equity products, as Chief Operating Officer in 1997 from DSC Data Services, an quantitative investment research firm he founded in 1988. In 1987, he was one of the original founders of DSI International Management. From 1988 to 1997, he was the founder and President of DSC Data Services, Inc., an independent, quantitative research firm.

Mr. Holmgren has a B.A. in Economics from Providence College and is a member of the NYSSA, CQA and CFAI.

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See Appendix "Performance Disclosures & Notes"

Performance Disclosures & Notes

Performance Disclosures & Notes

This presentation is furnished by Zebra Capital Management, LLC (“Zebra Capital”) to a limited number of investors and potential investors for use in one-on-one presentations on a confidential basis for informational purposes only, and should not be construed as legal, tax, investment or other advice.

Zebra Capital was organized as a limited liability company under the laws of the State of Connecticut, is based in Milford, Connecticut, and is registered with the U.S. Securities and Exchange Commission as an investment adviser. Zebra Capital currently provides and/or may provide in the future investment advisory and sub-advisory services to retail and institutional clients for public and private accounts, including separately managed accounts, private investment funds (e.g., hedge funds, private equity funds and venture capital funds, sponsored and/or managed by Zebra Capital) and registered investment companies (e.g., mutual funds).

Zebra Global Equity Fund, LP and Zebra Global Equity Fund, Ltd. are collectively referred to as the “Zebra Global Equity Funds”. Zebra Global Equity Advantage Fund, LP and Zebra Global Equity Advantage Fund, Ltd. are collectively referred to as the “Zebra Global Equity Advantage Funds”. The Zebra Global Equity Funds and the Zebra Global Equity Advantage Funds are collectively referred to as the “Zebra Funds”. The Zebra US Small Cap Liquidity Return and Zebra Japan Liquidity Return are collectively referred to as the “Zebra Managed Accounts”.

Past performance is no guarantee of future results. No representation is made that any investor will or is likely to achieve results similar to those shown in this presentation.

It should not be assumed that any of the securities transactions or holdings referred to herein were or will prove to be profitable, or that the investment recommendations or decisions Zebra Capital makes in the future will be profitable or will equal the investment performance of the securities referred to in this presentation. In addition, there can be no assurance that any trends described in this presentation will continue or that forecasts will occur because, among other things, economic and market conditions change frequently. There is no guarantee that the models used provide the same results as other available models.

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See Appendix “Performance Disclosures & Notes”

Performance Disclosures & Notes

An investment based upon Zebra Capital's strategies involves a substantial degree of risk and investors may lose all or substantially all of their capital. There is no guarantee that the investment objectives, investment performance expectations, risk and/or return targets discussed in this presentation will be achieved. Accordingly, any statement(s) made regarding such objectives, expectations and/or targets shall not constitute a representation or warranty that such investment objectives, expectations and/or targets will be achieved.

Zebra Capital trades with a high degree of leverage. Performance may be volatile. There are limited or no secondary markets for interests in hedge funds and none is expected to develop. Interests in hedge funds are not freely transferable and are subject to restrictive redemption provisions. The Zebra Funds and Zebra Managed Accounts are subject to substantial fees and expenses. Zebra Capital and other service providers may have conflicts of interest in managing the Zebra Funds and Zebra Managed Accounts. The Zebra Funds and Zebra Managed Accounts are not intended to be a complete investment program. Hedge fund investments are suitable only for financially sophisticated investors independently capable of evaluating the risks, as well as sustaining a total loss, of their investment.

This presentation is not intended as and does not constitute an offer to sell, or a solicitation of any offer to buy, any product, including the Zebra Funds and/or the Zebra Managed Accounts, under any circumstances whatsoever. If any such offer is made in the future, it will be made in accordance with applicable federal and state securities laws and will be described in appropriate written documents containing specific terms, conditions and limitations and prepared in accordance with applicable securities laws. In addition, no offer of any interest in any product will be made in any jurisdiction in which the offer, solicitation or sale is not permitted, or to any person to whom it is unlawful to make such offer, solicitation or sale.

Offers of interests in any fund to which Zebra Capital acts as an investment advisor or sub-advisor can only be made by means of such fund's Prospectus, Statement of Additional Information, Confidential Offering Memorandum, Private Placement Memorandum or similar offering document (the "Offering Materials"). All information contained herein is qualified in its entirety by such Offering Materials. Prospective investors should carefully review such Offering Materials prior to making any investment decision about any such fund.

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Performance Disclosures & Notes

The securities, if any, mentioned throughout this presentation are shown for illustrative purposes only and should not be interpreted as recommendations to buy or sell any particular security. In addition, there is no assurance that any security mentioned herein will remain in an account's portfolio at the time you receive this information or that any such security, if sold, has not been repurchased. The securities mentioned herein do not represent an account's entire portfolio over the course of a full market cycle.

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Certain of the financial statistics contained in this presentation were calculated using software by AlternativeSoft.

The information contained in this presentation is given as of a specific date, is likely to evolve over time, may not provide a full explanation of the topics presented and/or discussed in this presentation, and is not intended to be read in isolation. In addition, the opinions expressed in this presentation, including those of Zebra Capital, are subject to change.

Additional information about Zebra Capital, the Zebra Funds, the Zebra Managed Accounts and the performance results for each is available upon request.

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See Appendix "Performance Disclosures & Notes"

Performance Disclosures & Notes

Zebra US Micro Cap (Long Only)

Gross Performance Results (USD):

Performance information presented for the Zebra US Micro Cap Equity Strategy (the "Strategy") represents the actual performance of the Zebra US Micro Cap Managed Account, after the deduction of trading expenses and commissions, in each case for the periods indicated. Performance returns include cash and cash equivalents and reflect the reinvestment of dividends, interest and other earnings. The Strategy is managed on a fully discretionary basis according to the Zebra US Micro Cap Equity investment strategy.

Zebra Japan Liquidity Return Asset Weighted Composite (Long Only)

Actual Gross Performance Results (JPY) :

Performance information presented for the Zebra Japan Liquidity Return Asset Weighted Composite (the "Composite") represents the actual, asset weighted gross performance of each account, managed by Zebra, using the Zebra Japan Liquidity Return Investment Strategy (the "Japan Equity Strategy") for the periods indicated. Performance returns include cash and cash equivalents and reflect the reinvestment of dividends, interest and other earnings. Performance information is presented gross of actual management fees and other administrative expenses and after the deduction of trading expenses and commissions. The accounts comprising the Composite are managed on a fully discretionary basis according to the Japan Equity Strategy.

Gross Performance Results:

Gross performance information, when presented, reflects gross performance which is calculated after the deduction of trading expenses and before investment management fees and other administrative expenses. Actual returns would be reduced by such expenses.

Investment management fees and other administrative expenses do have an effect on investment results. For example, assume a 10% total return on a gross basis. If a 1% management fee and 0.50% of other expenses per year were charged, the net total return would be reduced from 10% to 8.5%. Looked at another way, \$10,000 invested at 10% for ten years would grow to \$25,940; at 8.5%, it would grow to \$22,606.

Investment advisory fees are described in Part 2A of Zebra Capital's Form ADV.

All returns are subject to review. As with any investment strategy, there is potential for profit as well as the possibility of loss.

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See Appendix "Performance Disclosures & Notes"

Performance Disclosures & Notes

Zebra US Small Cap Equity Strategy (Long Only)

Actual Net Performance Results (USD):

Performance information presented for the Zebra US Small Cap Equity Strategy (the “Strategy”) represents the net performance of the American Beacon Zebra Small Cap Equity Fund Series I (ticker “AZSIX”), to which Zebra Capital acts as a sub advisor. Performance returns include cash and cash equivalents and reflect the reinvestment of dividends, interest and other earnings. Net performance is presented net of management fees, distribution fees and other fund expenses, as applicable, attributable to an investment in AZSIX after taking into account any fees and expenses that American Beacon Advisors may have contractually agreed to reduce and/or reimburse through December 31, 2016. Such fees and expenses are not necessarily indicative of the management fees, incentive fees, commissions and other expenses charged by Zebra Capital for accounts managed by it according to the Strategy. The Strategy is managed on a fully discretionary basis according to the Zebra US Small Cap Equity investment strategy.

Zebra Global Equity Beta Neutral (ZGLEF)

Actual Net Performance Results (USD) :

Performance information presented for the Zebra Global Equity Fund, LP (“ZGLEF”) represents the actual net performance of ZGLEF for the periods indicated. Performance is presented net of actual management fees, incentive fees, commissions and other fund expenses as applicable. Performance returns include cash and cash equivalents and reflect the reinvestment of dividends, interest and other earnings. ZGLEF is managed on a fully discretionary basis according to the Zebra Global Equity investment strategy.

Zebra Global Equity Advantage Beta Neutral (ZGLEAF)

Actual Net Performance Results (USD) :

Performance information presented for the Zebra Global Equity Advantage Fund, LP (“ZGLEAF”) represents the actual net performance of ZGLEAF for the periods indicated. Performance is presented net of actual management fees (1.5%), incentive fees (20%), commissions and other fund expenses as applicable. Performance returns include cash and cash equivalents and reflect the reinvestment of dividends, interest and other earnings. ZGLEAF is managed on a fully discretionary basis according to the Zebra Global Equity Advantage investment strategy.

All returns are subject to review until completion of the annual audit. As with any investment strategy, there is potential for profit as well as the possibility of loss.

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See Appendix “Performance Disclosures & Notes”

Performance Disclosures & Notes

The BofA Merrill Lynch 3 Month Treasury Bill Index (TR, USD) is designed to measure the performance of high-quality short-term cash-equivalent investments.

The MSCI World Index (Net Dividends, USD) is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed markets. The **MSCI World Index** consists of the following 23 developed market country indexes: Australia, Austria, Belgium, Canada, Denmark, Finland, France, Germany, Hong Kong, Ireland, Israel, Italy, Japan, Netherlands, New Zealand, Norway, Portugal, Singapore, Spain, Sweden, Switzerland, the United Kingdom, and the United States.

The Russell 1000 Index (TR, USD) measures the performance of the large-cap segment of the U.S. equity universe. It is a subset of the Russell 3000® Index and includes approximately 1000 of the largest securities based on a combination of their market cap and current index membership. The Russell 1000 represents approximately 92% of the U.S. market. The Russell 1000 Index is constructed to provide a comprehensive and unbiased barometer for the large-cap segment and is completely reconstituted annually to ensure new and growing equities are reflected.

The Russell 2000 Index (TR, USD) measures the performance of the small-cap segment of the U.S. equity universe. The Russell 2000 is a subset of the Russell 3000® Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2000 of the smallest securities based on a combination of their market cap and current index membership. The Russell 2000 Index is constructed to provide a comprehensive and unbiased small-cap barometer and is completely reconstituted annually to ensure larger stocks do not distort the performance and characteristics of the true small-cap opportunity set.

The Russell Microcap® Index measures the performance of the microcap segment of the U.S. equity market. Microcap stocks make up less than 3% of the U.S. equity market (by market cap) and consist of the smallest 1,000 securities in the small-cap Russell 2000® Index, plus the next 1,000 smallest eligible securities by market cap. The Russell Microcap Index is constructed to provide a comprehensive and unbiased barometer for the microcap segment trading on national exchanges. The Index is completely reconstituted annually to ensure new and growing equities are reflected and companies continue to reflect appropriate capitalization and value characteristics.

TOPIX Total Return Index (TR, JPY): TOPIX is a free-float adjusted market capitalization-weighted index that is calculated based on all the domestic common stocks listed on the TSE First Section. TOPIX shows the measure of current market capitalization assuming that market capitalization as of the base date (January 4, 1968) is 100 point.

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See Appendix "Performance Disclosures & Notes"

Performance Disclosures & Notes

The indices presented are unmanaged and include the reinvestment of dividends and earnings. Investors cannot invest directly in these indices. The Russell Microcap Index is an appropriate index for the Zebra US Micro Cap Strategy because of the nature and mix of the investment holdings. All other indices are presented for informational purposes.

For more information on the Indices please refer to the respective company website links below.

<http://www.msci.com/products/indices/>

<http://www.russell.com/indexes/data/default.asp>

<http://www.mlindex.ml.com/GISPublic/bin/getdoc.asp?fn=G001&source=indexrules>

<http://www.jpx.co.jp/english/markets/indices/topix/>

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See Appendix "Performance Disclosures & Notes"

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T. Rowe Price

Mandate: U.S. Equity Market Trust

Hired: 2008

Firm Information	Investment Approach	Total ARMB Mandate
<p>T. Rowe Price Group, Inc. is an independent, publicly traded company with significant employee ownership. T. Rowe Price Group, Inc.'s shares are traded on the NASDAQ Stock Market (symbol: TROW), and are included in the S&P 500 Stock Index. T. Rowe Price Group, Inc. is the direct or indirect owner of multiple subsidiaries.</p> <p>As of 12/31/2016, the firm's total assets under management were \$810.8 billion.</p> <p>Key Executives: Charles Shriver, <i>Vice President, Portfolio Manager</i> Toby Thompson, <i>Vice President, Portfolio Manager</i> John D. Plowright, <i>Vice President-Institutional Client Service, North America</i></p>	<ul style="list-style-type: none"> • Seeks to match the performance of the U.S. equity market, as represented by the Russell 3000 Index. • Index reflects the performance of the largest 3,000 U.S. companies; large-cap stocks represent the majority of the index's market cap weighted value. • Attempts to accomplish its objective by investing in a sample of stocks that are representative of the index. <p>*In 2008, the T. Rowe Large Cap and Small Cap Trusts were consolidated into the U.S. Equity Market Trust which is currently one of four building blocks used as components in participant directed investment options.</p> <p>Benchmark: Russell 3000 Index</p>	<p>Assets Under Management: 12/31/2016: \$1,161 Million</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>
U.S. Equity Market Trust (net)	4.42%	13.03%	8.73%	14.89%
Custom Fixed Income Index ²	4.21%	12.74%	8.43%	14.67%

T. Rowe Price

Mandate: Bond Trust¹

Hired: 2008

Firm Information	Investment Approach	Total ARMB Mandate
<p>T. Rowe Price Group, Inc. is an independent, publicly traded company with significant employee ownership. T. Rowe Price Group, Inc.'s shares are traded on the NASDAQ Stock Market (symbol: TROW), and are included in the S&P 500 Stock Index. T. Rowe Price Group, Inc. is the direct or indirect owner of multiple subsidiaries.</p> <p>As of 12/31/2016, the firm's total assets under management were \$810.8 billion.</p> <p>Key Executives: Charles Shriver, <i>Vice President, Portfolio Manager</i> Toby Thompson, <i>Vice President, Portfolio Manager</i> John D. Plowright, <i>Vice President-Institutional Client Service, North America</i></p>	<ul style="list-style-type: none"> Primarily focus on investment-grade U.S. fixed income securities represented in the Barclays U.S. Intermediate Aggregate Index, Barclays U.S. Dollar Floating Rate Note Index, Barclays U.S. Long Treasury Index, and Barclays U.S. Treasury TIPS 1-5 Year Index. Integrate proprietary credit and capital market research to identify market inefficiencies. Seek to add value at the margin by coupling limited active management techniques with the risk-controlled aspects of passive management. Emphasize individual security selection and modest strategic and tactical deviations versus the benchmark. <p>Benchmark²:</p> <ul style="list-style-type: none"> 70% Barclays U.S. Intermediate Aggregate Index 15% Barclays U.S. Dollar Floating Rate Note Index 10% Barclays U.S. Treasury TIPS 1-5 Year Index 5% Barclays U.S. Long Treasury Index 	<p>Assets Under Management: 12/31/2016: \$1,167 Million</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>
Bond Trust (net)	-2.03%	2.19%	2.74%	2.07%
Custom Fixed Income Index ²	-1.98%	2.07%	2.66%	2.01%

¹ In June 2014 the Alaska Aggregate Bond Trust was renamed the Alaska Bond Trust consistent with enhancements to the Trust's investment profile.

² Custom Fixed-Income Index consisted of 100% Barclays Capital U.S. Aggregate Index from inception to 5/31/2014. Since 6/1/2014, the Custom Fixed-Income Index consists of 70% Barclays U.S. Aggregate Intermediate Bond Index, 15% Barclays U.S. Floating Rate Notes Index, 10% Barclays U.S. 1-5 Year Treasury TIPS Index and 5% Barclays U.S. Long Treasury Bond Index.

T. Rowe Price

Mandate: International Equity Trust

Hired: 1996

Firm Information	Investment Approach	Total ARMB Mandate
<p>T. Rowe Price Group, Inc. is an independent, publicly traded company with significant employee ownership. T. Rowe Price Group, Inc.'s shares are traded on the NASDAQ Stock Market (symbol: TROW), and are included in the S&P 500 Stock Index. T. Rowe Price Group, Inc. is the direct or indirect owner of multiple subsidiaries.</p> <p>As of 12/31/2016, the firm's total assets under management were \$810.8 billion.</p> <p>Key Executives: Charles Shriver, <i>Vice President, Portfolio Manager</i> Toby Thompson, <i>Vice President, Portfolio Manager</i> John D. Plowright, <i>Vice President-Institutional Client Service, North America</i></p>	<ul style="list-style-type: none"> Seeks to match the performance of the MSCI AC World Ex-U.S. index, an equity market index based on the free float adjusted market capitalization in about 45 developed and emerging market countries excluding the U.S. Attempts to accomplish its objective by investing in stocks that are representative of the index. <p>Benchmark¹: MSCI All Country World Index Ex-U.S.</p>	<p>Assets Under Management: 12/31/2016: \$507 Million</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>
International Equity Trust (net)	-1.54%	4.92%	-1.73%	6.47%
Custom Fixed Income Index ²	-1.20%	5.01%	-1.32%	6.91%

¹ Custom International Equity Index consisted of 100% MSCI EAFE Index from inception to 5/31/2014. Since 6/1/2014, the Custom International Equity Index consists of 100% MSCI All Country World Index ex U.S.

T. Rowe Price

Mandate: Money Market Trust

Hired: 1992

Firm Information	Investment Approach	Total ARMB Mandate
<p>T. Rowe Price Group, Inc. is an independent, publicly traded company with significant employee ownership. T. Rowe Price Group, Inc.'s shares are traded on the NASDAQ Stock Market (symbol: TROW), and are included in the S&P 500 Stock Index. T. Rowe Price Group, Inc. is the direct or indirect owner of multiple subsidiaries.</p> <p>As of 12/31/2016, the firm's total assets under management were \$810.8 billion.</p> <p>Key Executives: Charles Shriver, <i>Vice President, Portfolio Manager</i> Toby Thompson, <i>Vice President, Portfolio Manager</i> John D. Plowright, <i>Vice President-Institutional Client Service, North America</i></p>	<ul style="list-style-type: none"> • Seeks to preserve capital, liquidity, and consistent with these goals, the highest possible current income yield. The portfolio is managed to maintain a stable unit price of \$1.00. • Investment decisions are based on the objectives of quality, liquidity, diversification and yield. Minimal price volatility is sought through maturity management and security selection. • Managed to the same industry standards as the T. Rowe Price money market mutual funds. • Invests in high-quality, U.S. dollar-denominated securities that have been determined to present minimal credit risk. <p>Benchmark: Citigroup 3-Month T Bill</p>	<p>Assets Under Management: 12/31/2016: \$97 Million</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>
Money Market Trust (net)	0.15%	0.44%	0.18%	0.14%
Citigroup 3-Month T Bill	0.08%	0.27%	0.11%	0.09%

March 2, 2017



2017 Capital Market Projections

Alaska Retirement
Management Board

Paul Erlendson
Senior Vice President

Steve Center, CFA
Vice President

Agenda

- Process Overview
 - Why does Callan create capital market expectations?
- 2017 Expectations
 - What are our expectations and how did we develop them?
 - Current Conditions – Starting point
 - Economic outlook
 - Asset class outlook
 - *Equity*
 - *Fixed Income*
 - *Alternative Investments*
- Detailed 2017 Expectations and Resulting Portfolio Returns
- Appendix – Current Economic Conditions



Process Overview

Why Make Capital Market Projections?

Guiding Objectives and Process

- Cornerstone of a prudent process is a long-term strategic investment plan.
- Capital market projections are key elements — set reasonable return and risk expectations for the appropriate time horizon.
- Projections represent our best thinking regarding the long-term (10-year) outlook, recognizing our median projections represent the midpoint of a range, rather than a specific number.
- Develop results that are readily defensible both for individual asset classes and for total portfolios.
- Be conscious of the level of change suggested in strategic allocations for long-term investors: DB plan sponsors, foundations, endowments, trusts, DC participants, families and individuals.
- Reflect common sense and recent market developments, within reason.
 - Callan's forecasts are informed by current market conditions, but are not built directly from them.
- Balance recent, immediate performance and valuation against long-term equilibrium expectations.

Why Make Capital Market Projections?

Guiding Objectives and Process

- Underlying beliefs guide the development of the projections:
 - An initial bias toward long-run averages
 - A conservative bias
 - An awareness of risk premiums
 - A presumption that markets ultimately clear and are rational.
- Reflect our beliefs that long-term equilibrium relationships between the capital markets and lasting trends in global economic growth are key drivers to setting capital market expectations.
- Long-term compensated risk premiums represent “beta”—exposure to each broad market, whether traditional or “exotic,” with limited dependence on successful realization of alpha.
- The projection process is built around several key building blocks:
 - Advanced modeling at the individual asset class level (for example, a detailed bond model, an equity model)
 - A path for interest rates and inflation
 - A cohesive economic outlook
 - A framework that encompasses Callan beliefs about the long-term operation and efficiencies of the capital markets.

How are Capital Market Projections Constructed?

- Projections consist of return and two measures that contribute to portfolio volatility: standard deviation and correlation.
- Cover most broad asset classes and inflation
 - Broad Domestic Equity
 - *Large Cap*
 - *Small/mid Cap*
 - International Equity
 - *Developed Markets*
 - *Emerging Markets*
 - Domestic Fixed Income
 - *Short Duration*
 - *Broad Market*
 - *TIPS*
 - *High Yield*
 - *Long Duration*
 - International Fixed Income
 - Real Estate
 - Alternative Investments
 - Cash
 - Inflation



Current Conditions

The Capital Markets at January 2017

U.S. and Global Capital Markets Rallied After Mid-Year Investor Uncertainty

- Stock and bond markets endured a wild ride around the world, with Brexit and the US elections roiling investors' emotions. Underlying economic data remain positive, and tell a story of persistent modest growth in the U.S. and weak recovery in Europe.
- Five-year US equity returns through 2016 are very strong. Ten-year returns no longer include the robust 2003-05 results. Fifteen-year equity returns are still below long-run averages, but are above those of fixed income, as 2000-2002 downturn has rolled off the calculation.

							Average Annual Returns for periods ended 12.31.2016		
	2011	2012	2013	2014	2015	2016	5 Years	10 Years	15 Years
Broad U.S. Stock Market									
Russell 3000	1.03	16.42	33.55	12.56	0.48	12.74	14.67	7.07	7.11
Large Cap U.S. Stocks									
S&P 500	2.11	16.00	32.39	13.69	1.38	11.96	14.66	6.95	6.69
Small Cap U.S. Stocks									
Russell 2000	-4.18	16.35	38.82	4.89	-4.41	21.31	14.46	7.07	8.49
Non-U.S. Stock Markets									
MSCI EAFE US\$	-12.14	17.32	22.78	-4.90	-0.81	1.00	6.53	0.75	5.28
MSCI Emerging Markets	-18.17	18.63	-2.27	-1.82	-14.60	11.60	1.64	2.17	9.85
Fixed Income									
Barclays Aggregate	7.84	4.21	-2.02	5.97	0.55	2.65	2.23	4.34	4.58
Barclays Gbl Agg ex USD	4.36	4.09	-3.08	-3.09	-6.02	1.49	-1.39	2.44	4.96
Barclays Long Gov/Credit	22.49	8.78	-8.83	19.31	-3.30	6.67	4.07	6.85	7.03
Real Estate									
NCREIF	14.26	10.54	10.98	11.82	13.33	8.01	10.92	6.94	9.01
Hedge Funds									
CS Hedge Fund Index	-2.52	7.67	9.73	4.13	-0.71	1.25	4.34	3.75	5.74
Private Equity									
Cambridge Private Equity*	11.00	13.33	22.13	12.75	7.10*	4.06*	10.89*	10.54*	10.22*
Commodities									
Bloomberg Commodity	-13.37	-1.14	-9.58	-17.04	-24.70	11.40	-9.06	-6.23	-0.11
Cash Market									
90-Day T-Bill	0.10	0.11	0.07	0.03	0.05	0.33	0.12	0.80	1.34
Inflation									
CPI-U**	2.96	1.74	1.50	0.76	0.73	1.69	1.30	1.82	2.07

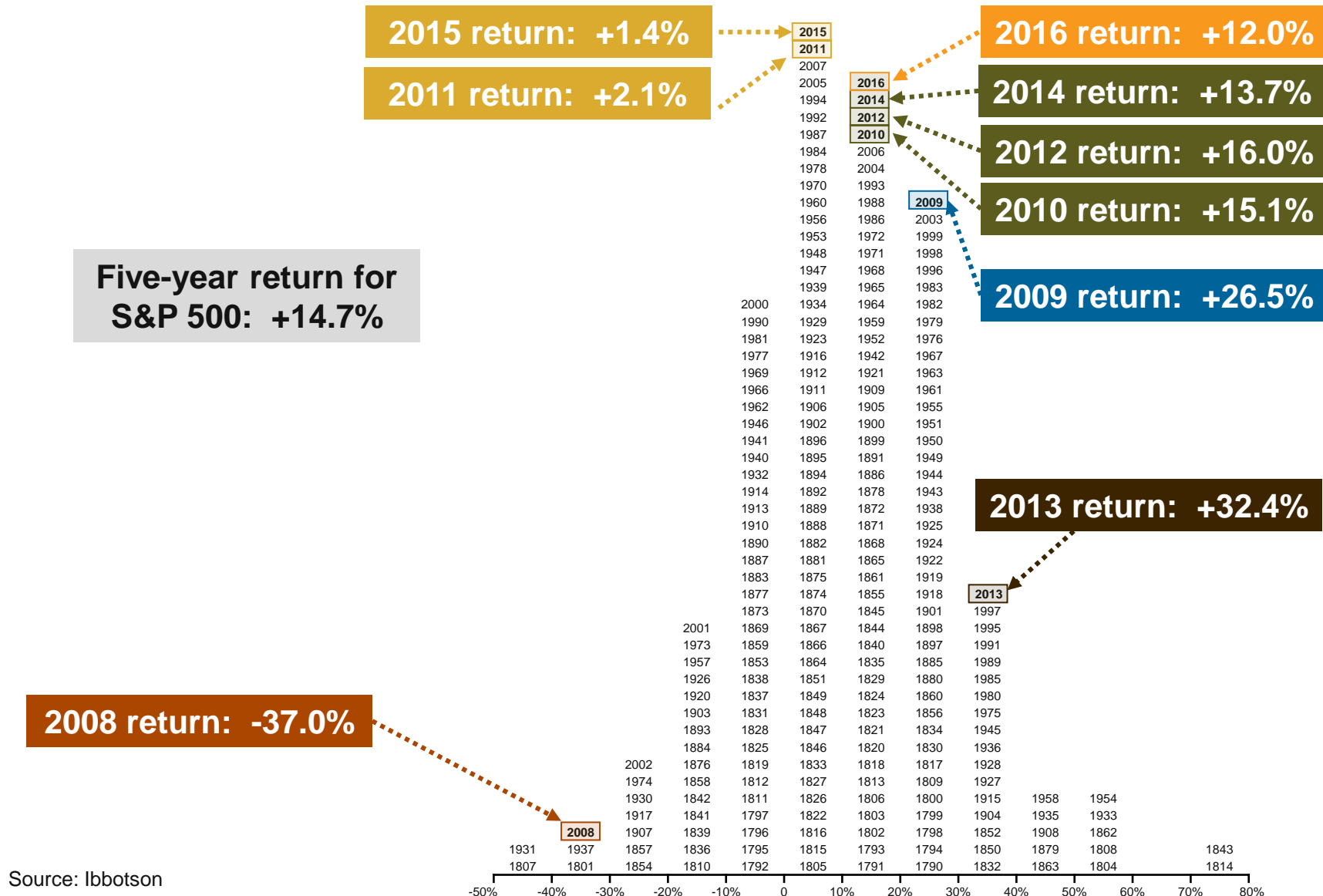
* Private equity data is time-weighted return series for periods ended 6.30.2016 rather than 12.31.2016 in select columns due to a reporting lag.

** CPI-U data are measured as year-over-year change through 11.30.2016.

Source: Callan Associates

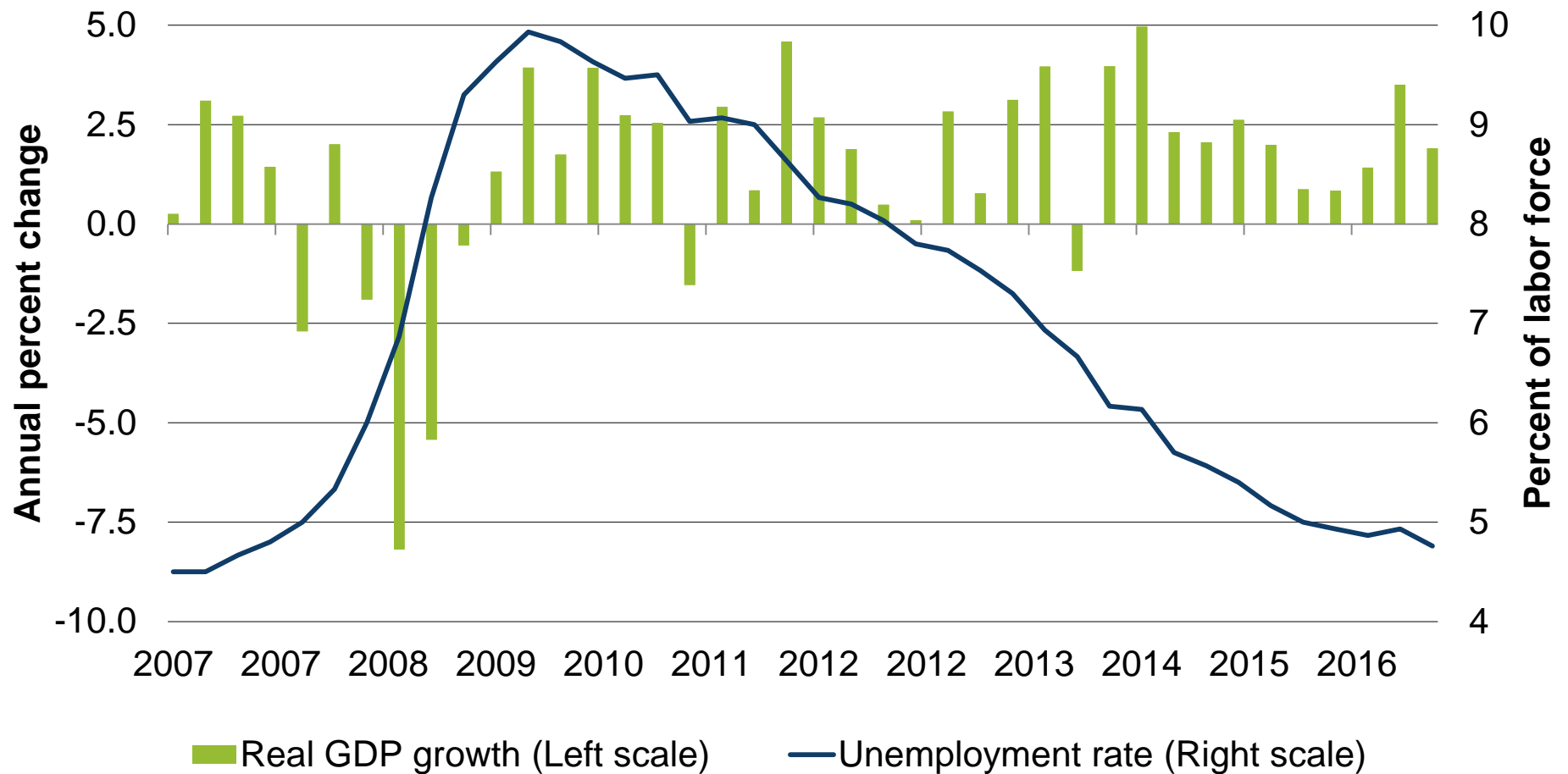
Stock Market Returns by Calendar Year

2016 Performance in Perspective: History of the U.S. Stock Market (228 Years of Returns)



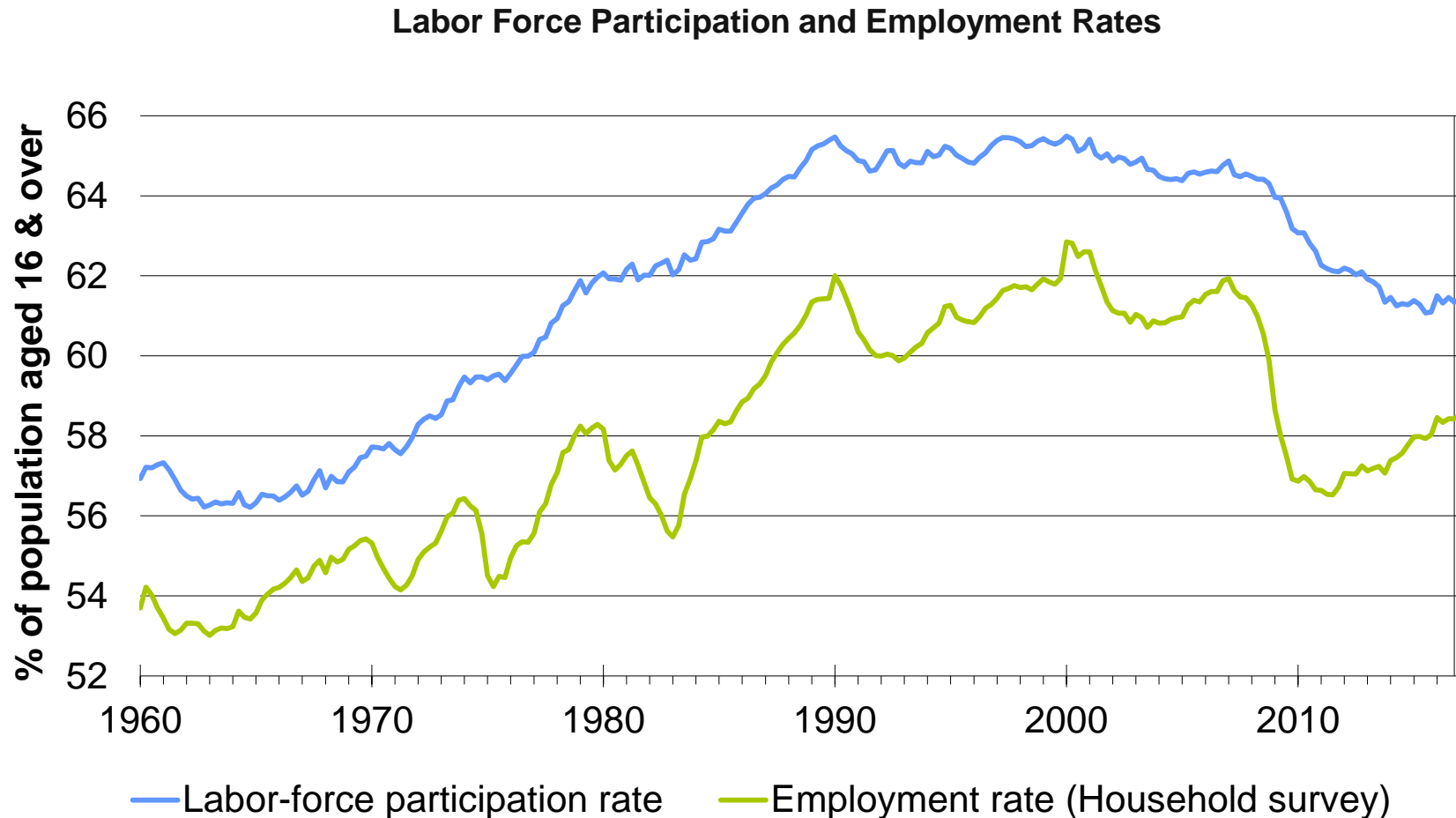
Unemployment Declined Even With Modest GDP Growth

Rate Now Well Below Fed Target – A Full Employment?



Labor-Force Participation and Employment Rates Suppressed

Aging of the Baby Boomers Keep Rates Below Pre-Recession Levels



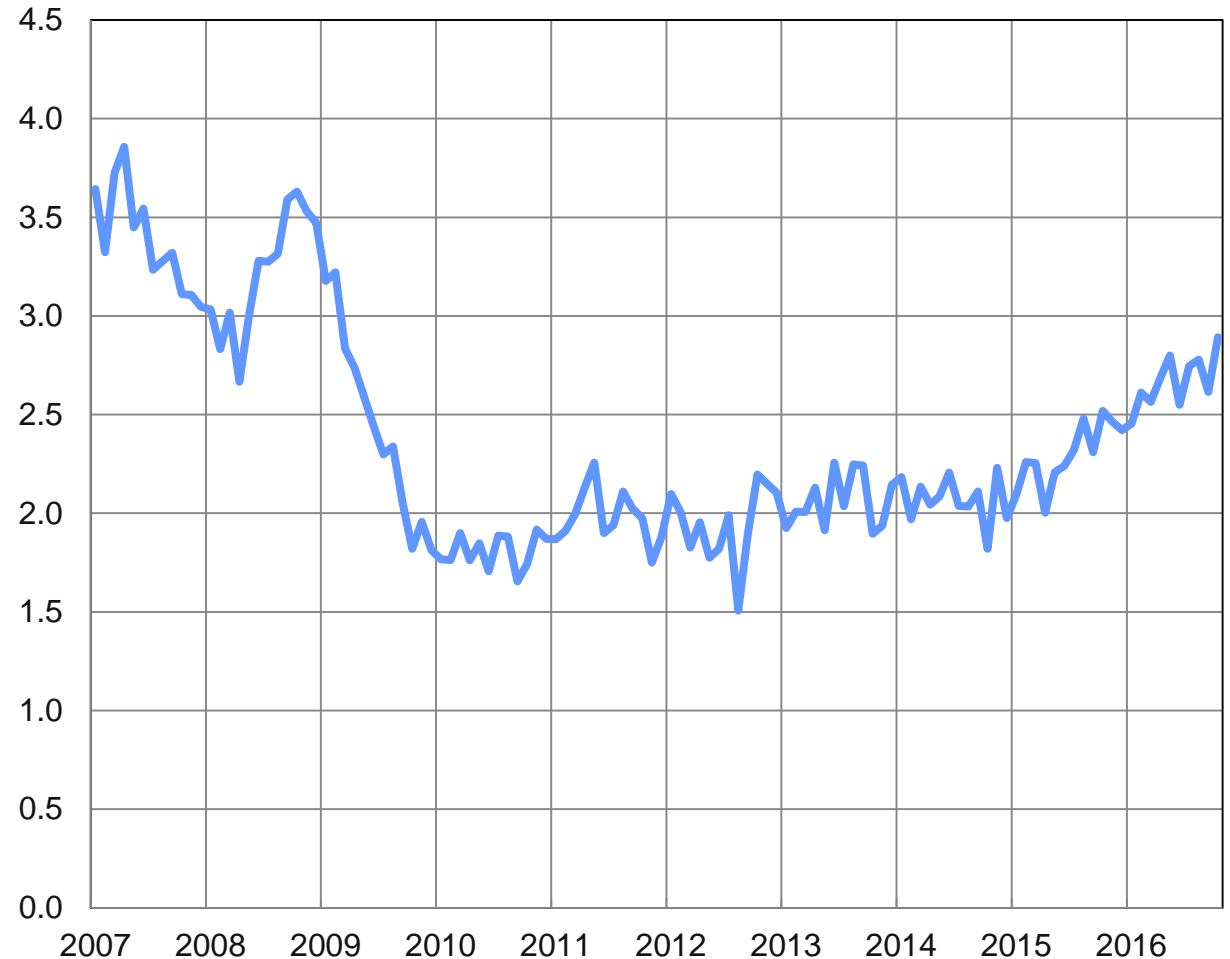
Source: IHS

Growing Inflation Pressures From Wages

Wages flat until 2015

- Sector mix
 - new jobs created in lower-paying fields
- Experience displacement
 - more experienced employees being replaced by less experienced ones
- “Pent up wage deflation”
 - sticky wages prevented full wage adjustments from occurring during the recession
- Substantial job gains and unemployment at 4.7% is beginning to put pressure on wages
 - still sector and region specific

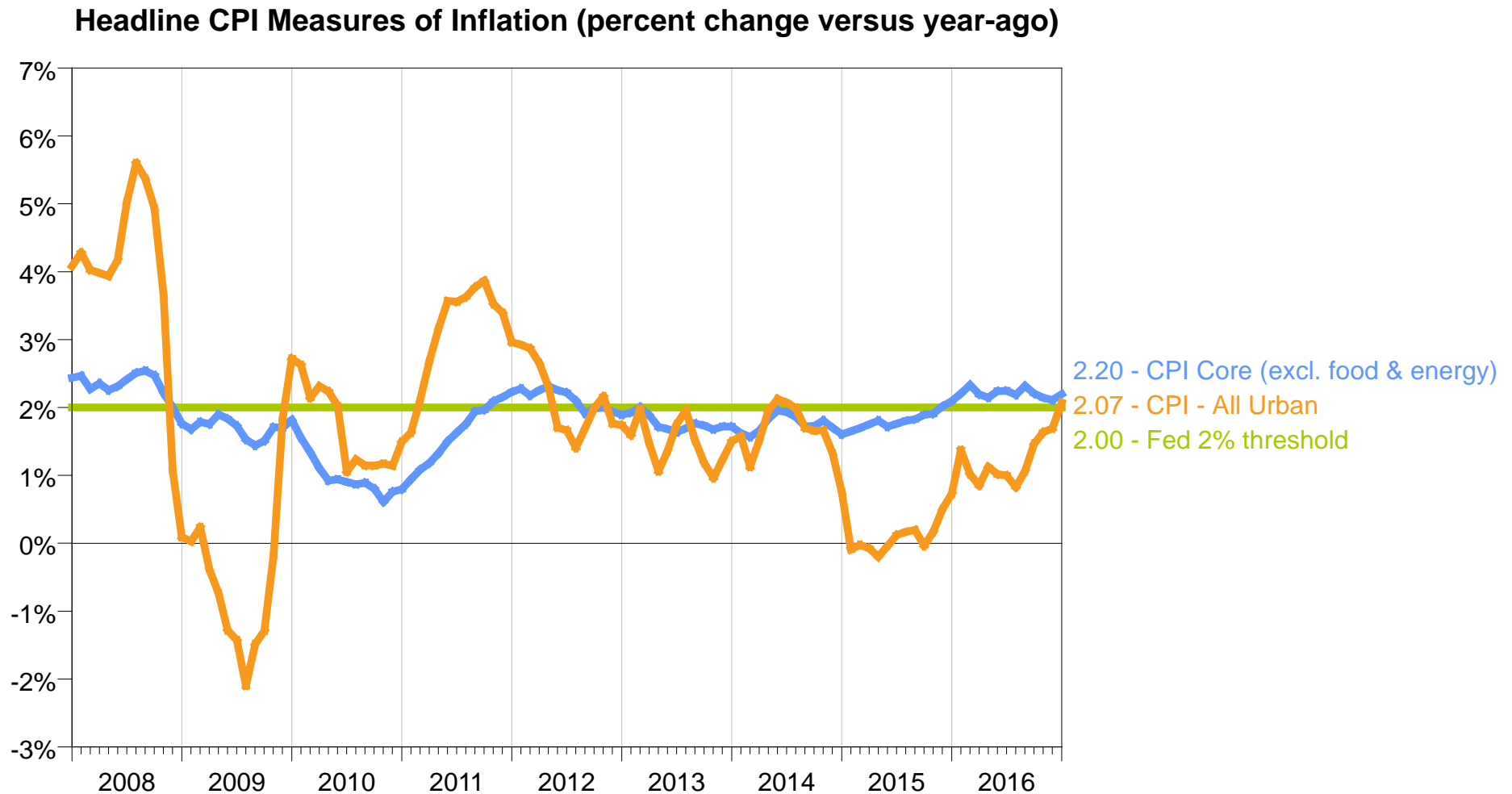
Average Hourly Earnings



Source: IHS, US BLS, Callan Associates

Inflation Concerns Revive

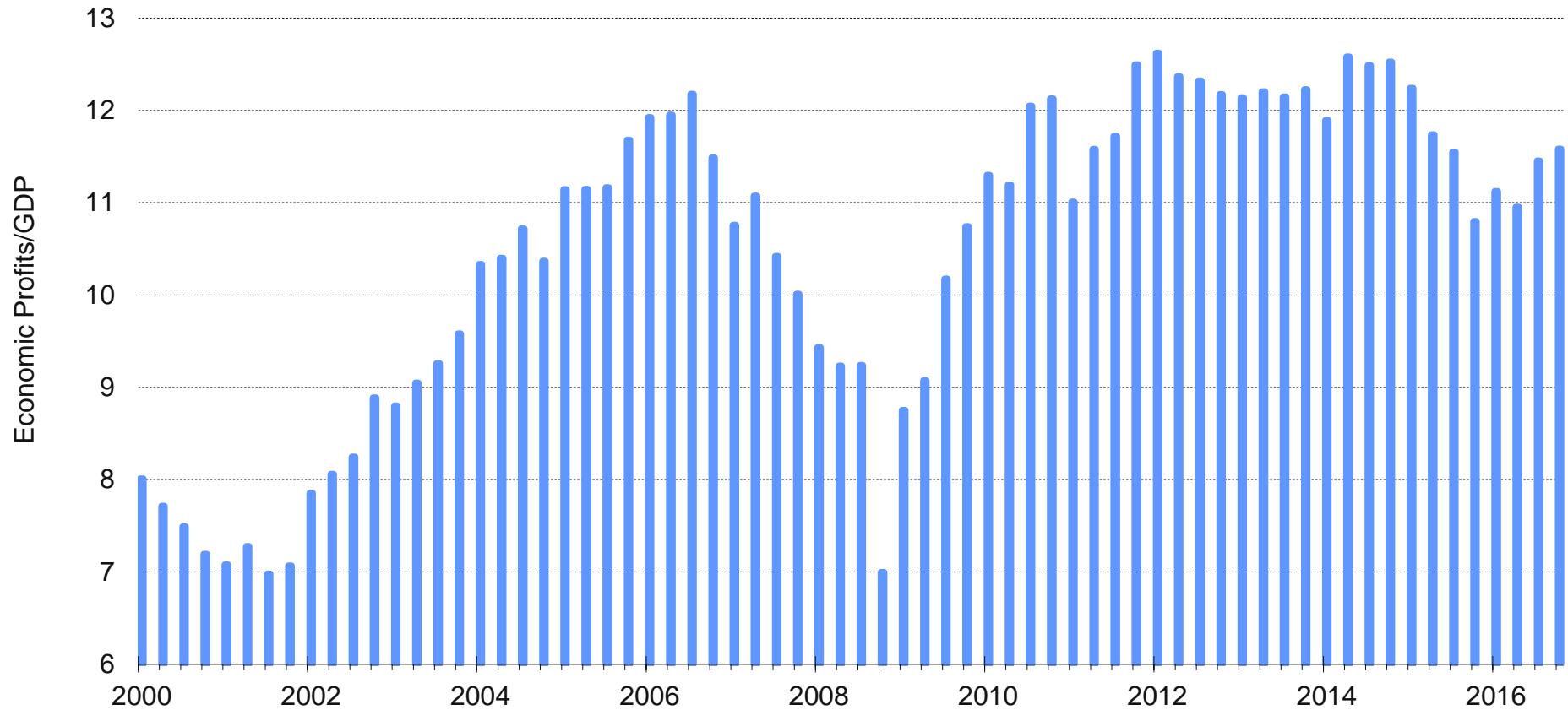
CPI Rebounded With Oil Prices in the Second Half of 2016



Source: Bureau of Labor Statistics and Callan

Corporate Profit Margins Remain Near All-Time Highs

Profit Margins



Source: Global Insight

U.S. Economic Growth by Sector

Annual Percentage Change

	12/31/2006 Share of GDP	12/31/2016 Share of GDP	2008	2009	2010	2011	2012	2013	2014	2015	2016	Direction of Change
Real GDP	100.0%	100.0%	-0.3	-2.8	2.5	1.6	2.2	1.7	2.4	2.6	1.6	Stable but back below 2%
Consumption	67.2%	69.1%	-0.3	-1.6	1.9	2.3	1.5	1.5	2.9	3.2	2.7	Back above GDP growth
Residential Investment	5.5%	3.5%	-24.0	-21.2	-2.5	0.5	13.5	11.9	3.5	11.7	4.7	Recovered in 2015
Bus Fixed Investment	12.6%	13.2%	-0.7	-15.6	2.5	7.7	9.0	3.5	6.0	2.1	-0.2	Growth slowed in 2015; energy decline
Federal Government	7.3%	6.7%	6.8	5.7	4.3	-2.7	-1.9	-5.8	-2.5	0.0	0.7	No stimulus since 2010
State & Local Government	12.4%	10.7%	0.3	1.6	-2.7	-3.3	-1.9	-0.8	0.2	2.9	0.9	Modest gains as economy improves
Exports	10.3%	12.8%	5.7	-8.8	11.9	6.9	3.4	3.5	4.3	0.1	0.4	Weakened by strong \$
Imports	15.7%	16.1%	-2.6	-13.7	12.7	5.5	2.2	1.1	4.4	4.6	0.9	Consumption improving plus strong \$

- Recovery has been modest by historical standards. U.S. GDP suffered a hiccup in first quarters of 2014, 2015 and 2016, but regained momentum as each year progressed.
- Housing market found a bottom, and new home construction surged following a slump in 2014. Consumer spending moved back into a driving force as the job market solidified and consumer wealth rebounds. Housing remains challenged by demographics.
- Government spending as a percent of GDP peaked in 2011, receded in 2012-14 without further stimulus.
- Note: Imports are a negative number in the calculation of GDP.

Source: IHS Global Insight and Callan

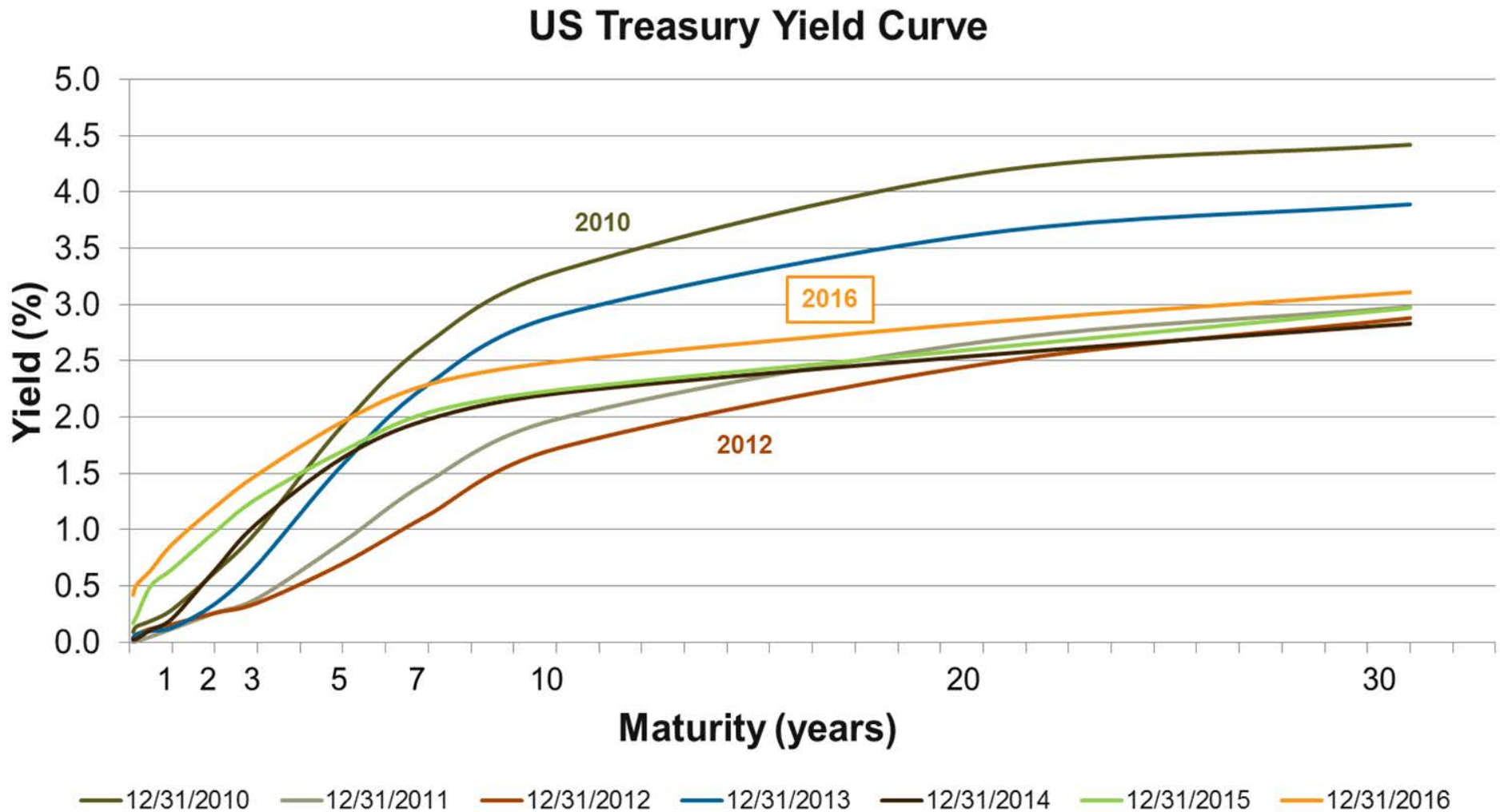
Economy Update Through December 2016

Modest Growth Continues in the US; Concerns Remain Elsewhere

- Wild swings in sentiment and confidence moved markets around the globe, without regard to the underlying economic data. Which was reasonably positive!
- The US economy shows modest strength.
 - Third quarter GDP growth came in strong at 3.5%, fourth quarter at 1.9%; annual growth for 2016 will average 1.6%, down from 2.6% in 2015.
 - Job growth has been consistent and strong. Unemployment rate is down to 4.7%, well below any Fed target. Are we approaching full employment?
 - Consumer spending is strong, driving GDP growth. However, inventories were built in anticipation of even stronger spending, which led to a weak start to 2016.
- Modest recovery slow to take shape in Europe in response to continued stimulus.
 - Progress on the recovery in Europe is clouded by refugee crisis, geopolitical change, fallout from Brexit.
- Fed is talking rate increases. Capital markets do not necessarily buy Fed's articulated pace of rate hikes: futures market predicts fewer hikes and a slower pace.
 - At the February 1, 2017 meeting of the Federal Open Market Committee, the Fed decided to keep the federal funds rate at 1/2 to 3/4 percent. The next meeting is scheduled for March 14-15, 2017.
- Energy prices found a bottom, bringing inflation back to 2%.
- Uncertainty surrounding trade a major source of negative sentiment and market volatility.
 - Slowing growth in China, and context matters: China is now the second largest economy, slowing growth means dropping below 7%.
 - US economic exposure to China is relatively small compared to Europe and emerging markets.
 - Trade wars?

Treasury Rates Rose Across the Curve by the End of 2016

U.S. Treasury Yield Curves

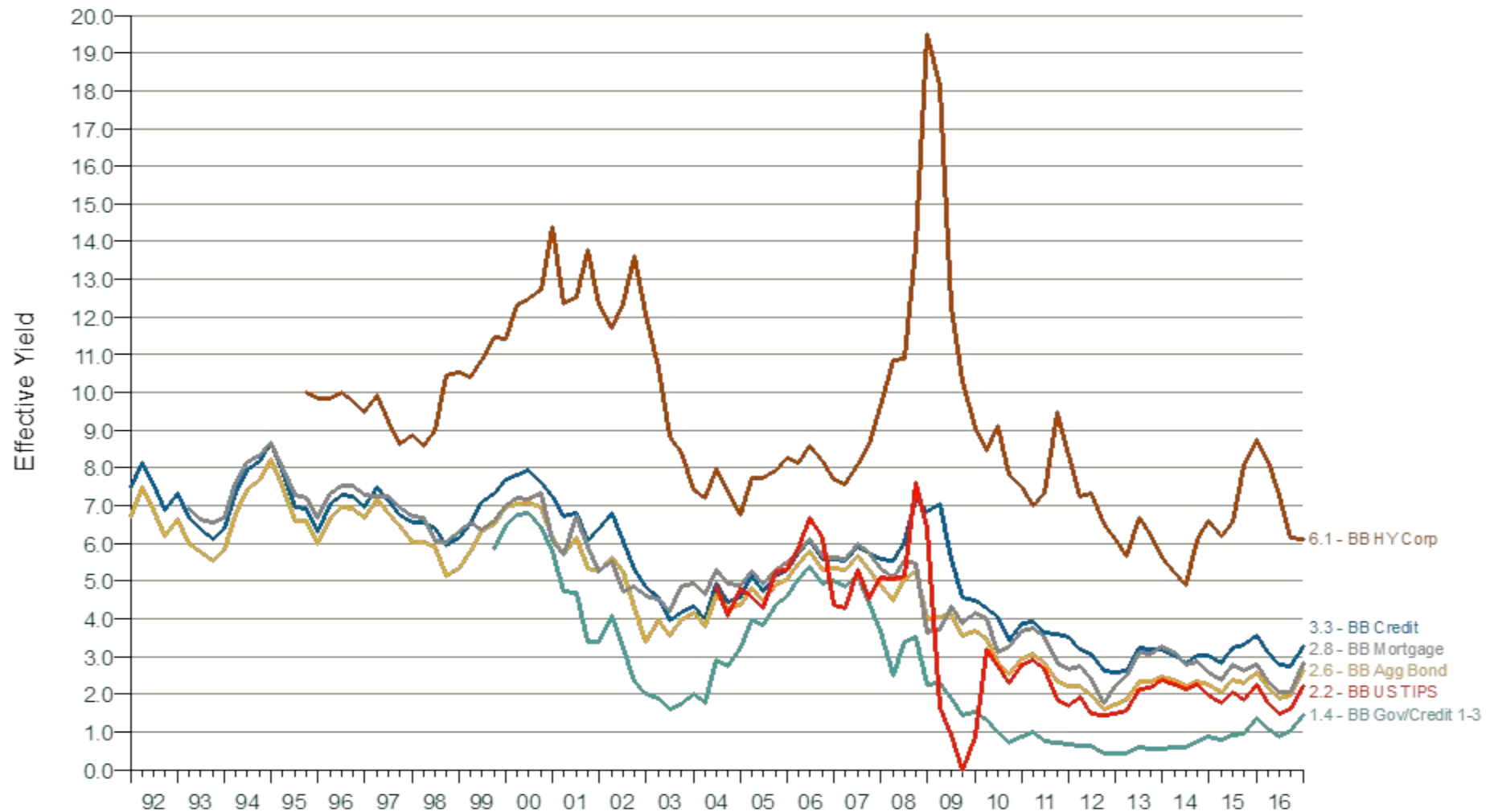


Source: Federal Reserve and Callan

Have Interest Rates Hit Bottom, At Least in the U.S.?

Effective Yields – Various Benchmarks

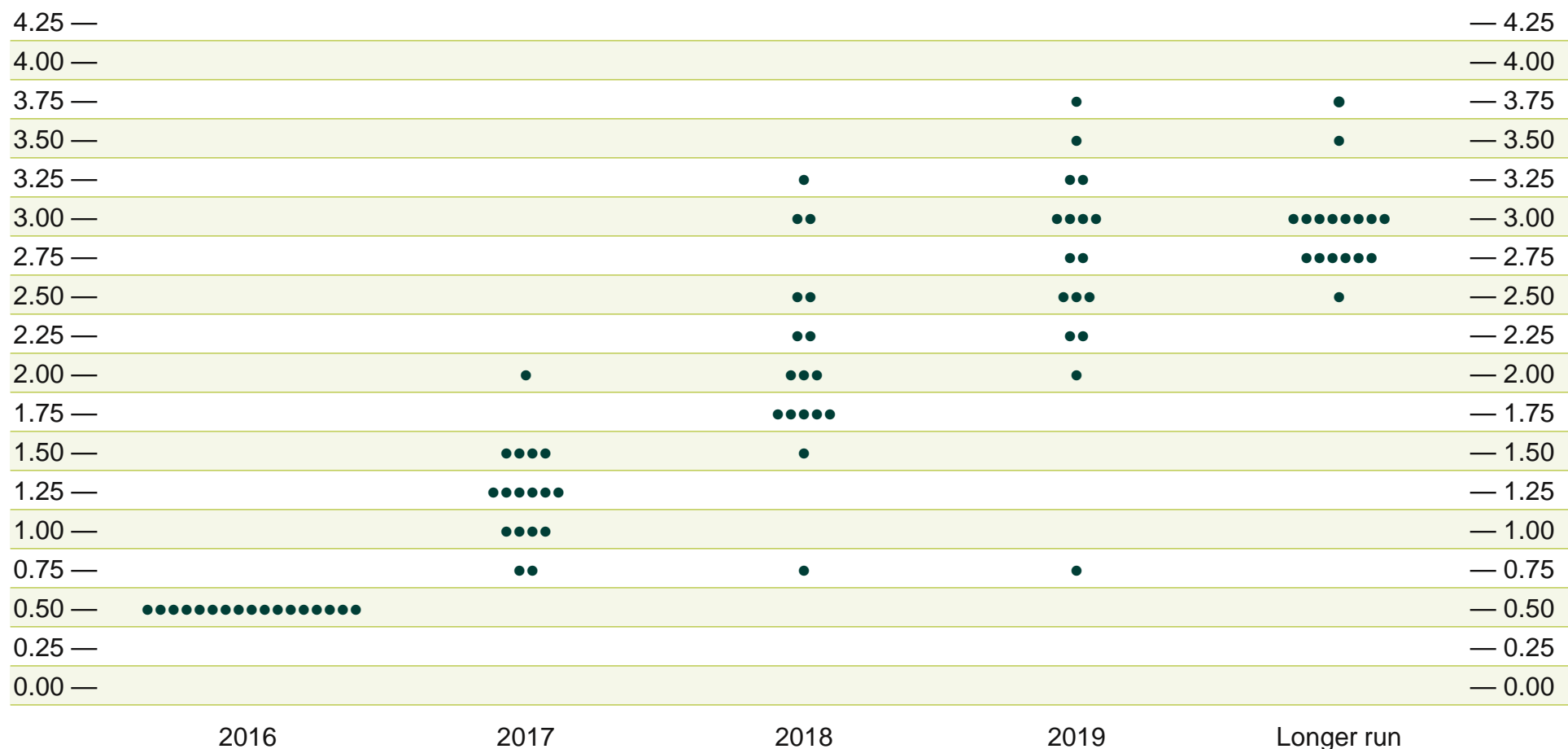
EFFECTIVE YIELD FOR 25 YEARS ENDED DECEMBER 31, 2016



The Federal Reserve Dot Chart

Longer Term Target has Consensus Within the FOMC, But Not the Path to Get There

Target fed funds rate at year-end (December projections)

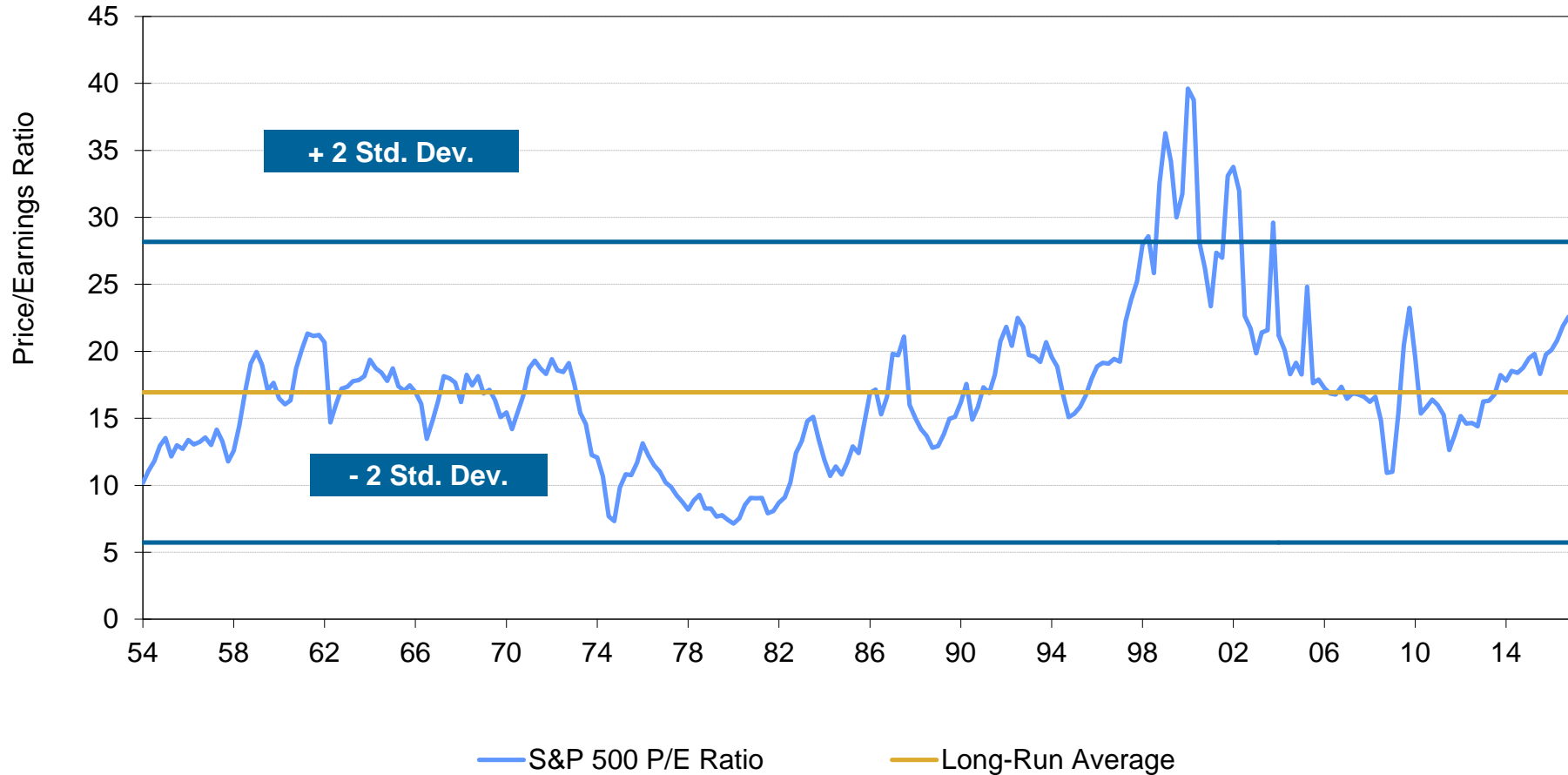


Each shaded circle indicates the value of an individual participant's judgment of the midpoint of the target federal funds rate at the end of the specified calendar year and over the longer run. The number in each column represents the lower bound of an 0.25 percentage point range.

Egregiously Overvalued, Or the Best of What's Out There?

Trailing P/E for the S&P 500 Surges Past Its Long Run Average

Price to Earnings Ratio for S&P 500 (1954 - 2016)



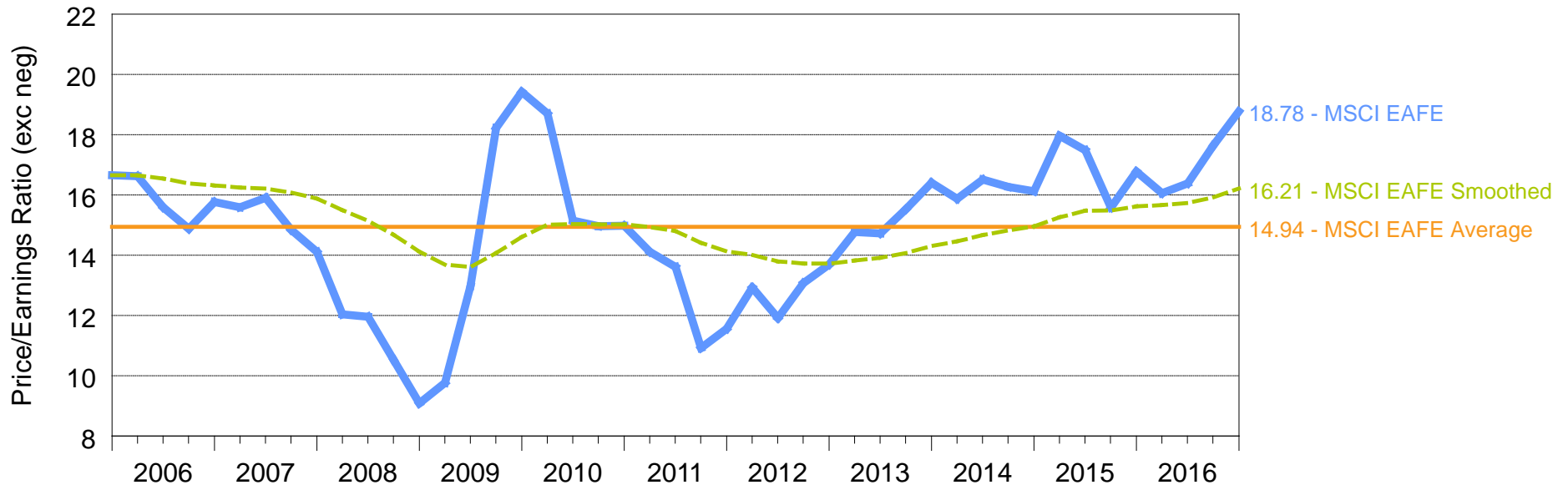
Trailing earnings as reported for the fiscal year; includes negative earnings from 1998 onward.

Source: Standard & Poor's and Callan

Can Non-U.S. Equities Overcome Economic Issues?

Developed Markets Valuations Are Less Reasonable Than A Year Ago

Price/Earnings Ratio (exc neg) for 11 Years ended December 31, 2016



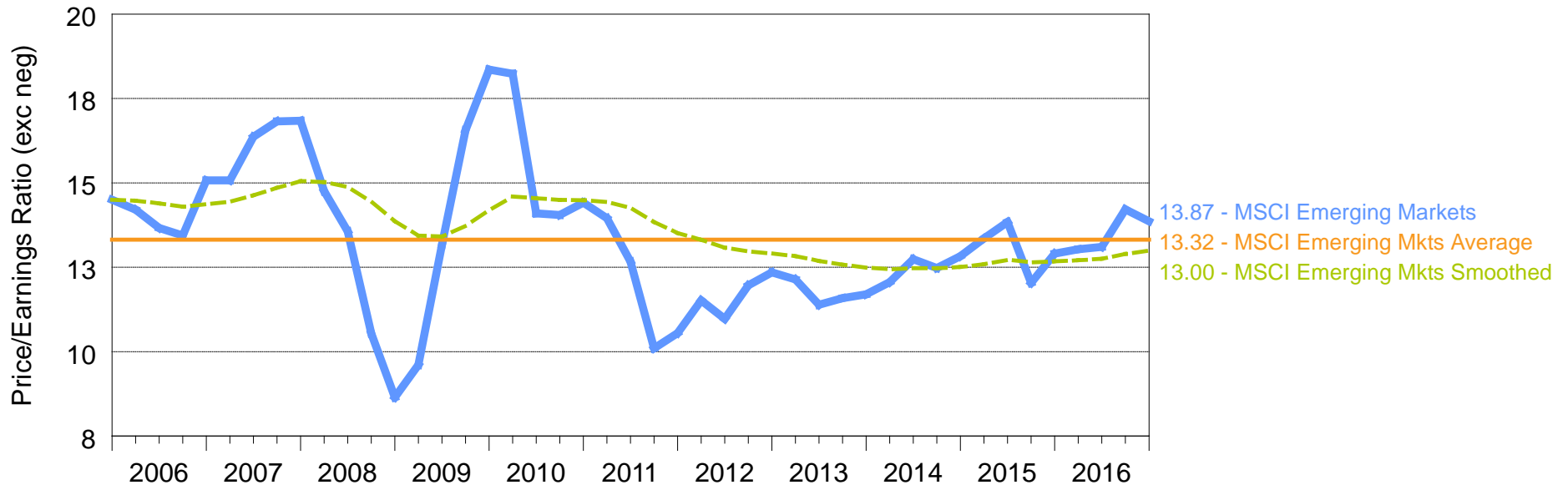
- Valuations are now high relative to history.
- Stock prices can only increase so far as earnings increase without creating valuation issues.

Source: MSCI

Can Non-U.S. Equities Overcome Economic Issues?

Emerging Markets Valuations Should Improve

Price/Earnings Ratio (exc neg) for 11 Years ended December 31, 2016



- Valuations are generally lower than developed markets to account for additional risk.
- There is significant room for growth in both earnings and stock prices but a slightly higher growth rate for prices is expected to move valuations closer to historical averages.

Source: MSCI



Economic Outlook

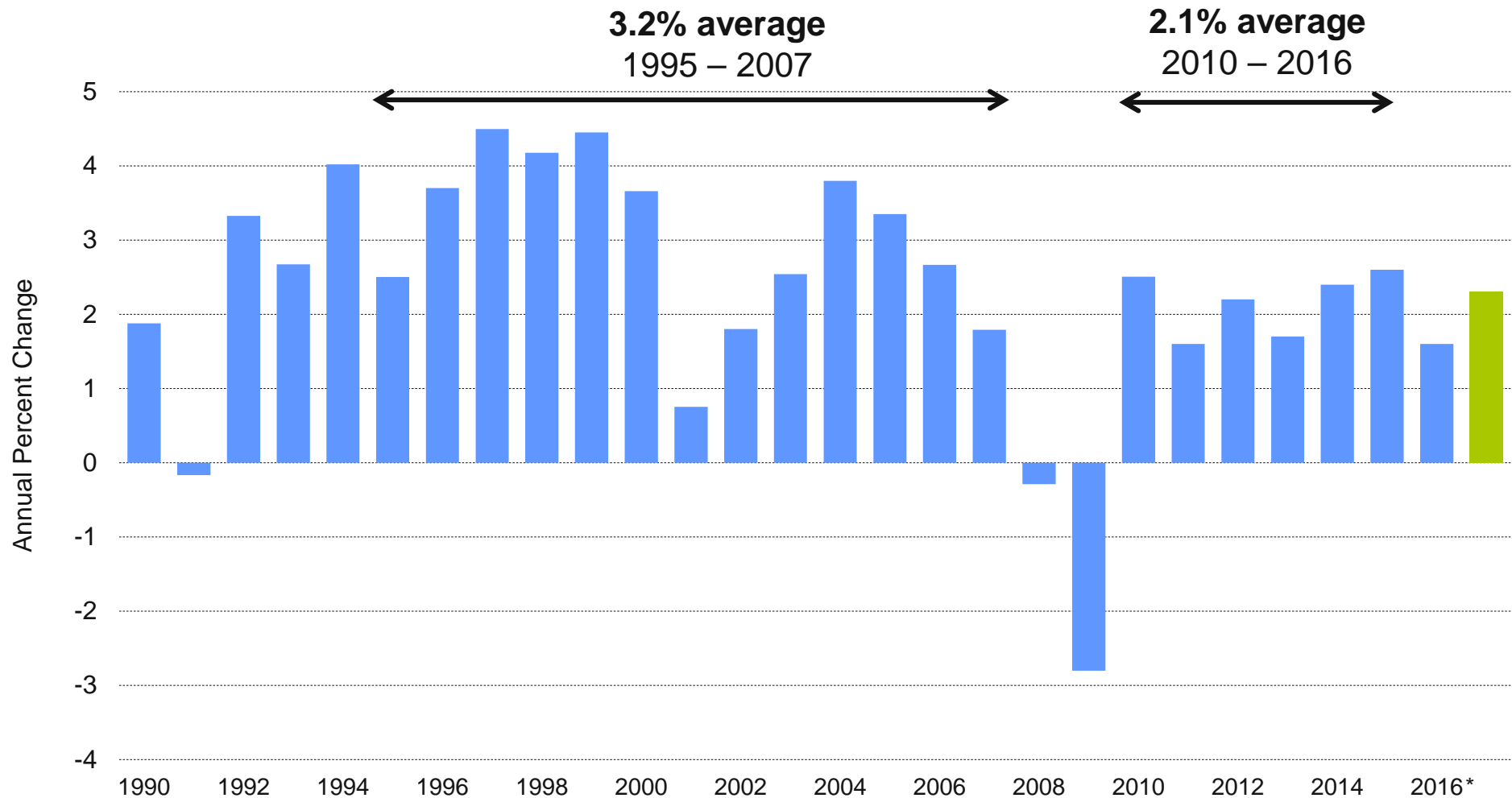
Economic Outlook

Role of Economic Variables

- Real Gross Domestic Product (GDP) Growth and Consumer Price Inflation (CPI) are forecast
- Callan forecasts are based on forecasts provided by the Federal Reserve and the International Monetary Fund (IMF)
 - Forecasts are country-specific for non-US markets
 - Aggregated non-US forecasts are weighted averages using World ex USA and Emerging Markets index weights
- Forecasts are intertwined
 - GDP and inflation tend to rise and fall together
- Forecasts form a starting point for projections
 - GDP forecasts provide a very rough estimate of future earnings growth
 - Inflation forecasts provide an approximate path for short-term yields
 - Inflation is added to the real return forecasts for equity and fixed income

U.S GDP Growth on a Slower Trajectory

Real GDP Growth



* 2017 forecast – IHS Global Insight

Source: IHS

Economic Outlook

GDP Growth Forecasts

- 2% to 2.5% for the US
 - Higher growth rate than the post financial crisis time period but lower than the last half century average
 - Factors which could lead to upper end of forecast
 - *Strong labor market*
 - *Expansive fiscal policies of the incoming administration*
 - *Restrictive trade policies*
 - Factors which could lead to lower end of forecast
 - *Tighter monetary policy, unexpectedly high interest rates or both*
 - *Congressional resistance to the fiscal policies of the incoming administration*
 - *Strong dollar*
- 1.5% to 2.0% for Developed Non-US Markets
 - Lower than the US due to concerns about political, fiscal and monetary policy as well as the banking system
 - Factors which could lead to upper end of forecast
 - *Additional stimulative monetary policies*
 - *Controlled growth of government budget deficits*
 - *Reduced levels of austerity*
 - *Improvements in bank balance sheets*
 - *Reduced unemployment*
 - Factors which could lead to lower end of forecast
 - *Political uncertainty*
 - *Trade issues*
 - *Declining health of the financial sector*

Economic Outlook

GDP Growth Forecasts

- 4% to 5% for Emerging Markets
 - Absolute size of many emerging economies (primarily China and India) limits growth to below historical values
 - Growth rates still substantially exceed those of the developed markets
 - Factors which could lead to upper end of forecast
 - *Improving export markets*
 - *Expanding internal demand*
 - Factors which could lead to lower end of forecast
 - *Domestic government policies*
 - *Developed market trade restrictions*

Economic Outlook

Inflation Forecasts

- 2% to 2.5% for the US
 - Headline values ticking up but still less than 1.75% while core inflation has been above 2% since late 2015
 - Factors which could lead to upper end of forecast
 - *Rising energy prices*
 - *Tight labor markets*
 - *Fiscal stimulus*
 - *Declining dollar drives up import prices*
 - Factors which could lead to lower end of forecast
 - *Poor overseas economic performance strengthens the dollar*
 - *Competitive labor market keeps wages in check*
 - *The Fed implements tight monetary policy*
- 1.75% to 2.25% for Developed Non-US Markets
 - Inflation is starting to tick up but is very low in largest economies
 - Factors which could lead to upper end of forecast
 - *More expansive fiscal policies*
 - *Faster economic growth*
 - Factors which could lead to lower end of forecast
 - *Opportunities for additional fiscal and monetary stimulus are limited*
 - *Slack in European labor markets*

Economic Outlook

Inflation Forecasts

- 2.5% to 3.5% for Emerging Markets
 - Future inflation is uncertain
 - Path of prices depends on government policies, relative currency strength, trade policies, the balance of internal supply and demand, and commodity prices



Asset Class Outlook

Equity Forecasts

Overview

- Fundamental Relationship

$$\text{Equity Return} = \text{Capital Appreciation} + \text{Income}$$

- Forecast capital appreciation depends on projected future earnings
 - Long-term earnings tend to correspond to long-term GDP growth
 - *Weak short-term relationship*
 - *Relationship more robust in developed than emerging markets economies*
 - Investors will pay more for stocks with better future earnings potential
 - *Prices don't depend on historical or current earnings*
- Forecast income also depends on projected future earnings
 - Income is related to earnings via the payout ratio
 - Income also influenced by
 - *Prospects for future corporate investments*
 - *Interest rates*
- Valuations have limited impact on forecasts
 - Average P/Es over different market cycles differ markedly
 - *Oil Boycott*
 - *Tech Bubble*
 - *Global Financial Crisis*
 - Capital market projections only impacted when markets reach extreme valuations

Equity Forecasts

Broad US Equity

- Return = 6.85%, Risk = 18.25%
- Broad US equity is represented by the Russell 3000 index
- Earnings growth likely to improve
 - Stronger GDP growth
 - More expansive economic policies
- Dividend yield consistent with recent history
 - Payout ratios close to historical norms
 - Yields have been stable for 20 years in the face of changing interest rates
- Any additional return from share buybacks likely offset by dilution from additional issuance

Equity Forecasts

Global ex US Equity

- Return = 7.00%, Risk = 21.00%
- Global ex US equity is represented by the MSCI All-Country World ex USA index
- Earnings growth likely to be moderate
 - Improving outlook for developed markets economies but from a low starting point
 - Emerging market growth declining but still substantial
 - Significant uncertainty in future economic policies
- Relatively high dividend yields will support returns
 - Developed markets yields are measurably higher than those in the US
 - *High even relative to history*
 - *Dividends to make up differences in capital appreciations between US and developed non-US markets*
 - Emerging markets yields not as high as in developed markets but still higher than in US

Fixed Income Forecasts

Overview

- Fundamental Relationship

$$\text{Bond Return} = \text{Capital Appreciation} + \text{Income} + \text{Roll Return}$$

- Forecast capital appreciation depends on projected future interest rates
 - Inflation
 - Central bank policy
 - Credit conditions
- Income = yield
- Roll return reflects capital appreciation from declines in yields as bonds move toward maturity with upward sloping yield curves

Fixed Income Forecasts

Broad US Fixed Income

- Return = 3.00%, Risk = 3.75%
- Broad US fixed income is represented by the Bloomberg Barclays Aggregate index
- Interest rates expected to rise
 - Most of the increase is expected over the next 3 years
 - Our path is consistent with that forecast by the Fed
- Yield curve expected to flatten
 - Yield curve currently steep
 - Long rates are still expected to increase but not as much as short rates
- Higher yields expected to be earned over most of the forecast horizon
- Capital losses expected as yields increase in early years
 - Losses consistent with moderate duration
 - *Historically about 5 but currently closer to 6*
 - Little impact from changing credit spreads
- Roll return expected to decline
 - Current steep yield curve provides relatively high roll return
 - Flatter curve will reduce its contribution to total return

Alternative Investment Forecasts

Hedge Funds

- Return = 5.05%, Risk = 9.15%
- Hedge funds are represented by the Callan Hedge Fund of Funds database
- Hedge funds returns will be supported by increasing interest rates
 - Hedge fund returns consist of cash plus a spread
 - Cash returns are forecast to increase to 2.25%
- Hedge funds overall tend to have an equity beta
 - Beta tends to be about 0.4
 - Return expected between that of stocks and bonds; benefit to hedge fund investing derives from potential for diversification to stocks and bonds
 - Expected hedge fund return reduced due to lower forecast equity returns
- Hedge funds earn risk premia
 - Exotic beta
 - Illiquidity
- Forecast does not include a net active management premium beyond beta and illiquidity
 - Broad spectrum of possible returns
 - Represents an average expectation for return across the universe
 - Skillful managers expected to earn net excess returns

Alternative Investment Forecasts

Real Estate

- Return = 5.75%, Risk = 16.35%
- Real estate is represented by the Callan Real Estate database
- Real estate returns reflect decreases in cap rates
 - Cap rates declined about 25 bps during 2016
 - Spread between cap rates and bonds has compressed making real estate relatively less attractive
- Overall real estate tends to have an equity beta
 - Stylized beta tends to be about 0.75
 - Reduced equity expectations weigh on real estate return
- Risk reflects economic realities rather than volatility observed under normal conditions
 - Observed volatility is generally less than 5% in normal markets
 - Our forecast volatility better represents the risk of loss
 - *Assuming a 3% standard deviation would imply that the real estate loss experienced during the financial crisis was a 10+ standard deviation event*

Alternative Investment Forecasts

Private Equity

- Return = 7.35%, Risk = 32.90%
- Private equity is represented by the Cambridge Private Equity index
- Private equity forecasts related to public equity forecasts
 - Both returns driven by similar economic factors
 - *Risk premia for both should rise and fall together*
 - Public equity markets are often the exit strategy for private equity investments
 - *Less attractive public markets reduce the outlook for private equity*
 - The compound return reflects heightened risk
 - *In any single period the private equity forecast has a 4.15% spread over the US public equity forecast*
- Wide range of results across implementations
 - The best managers far outperform the worst managers in any given period
 - Superior managers could substantially outperform our projected return
- Risk reflects economic realities rather than volatility observed under normal conditions
 - Observed volatility is generally less than that of the S&P 500
 - Variations in investment values can't be observed since private equity is not frequently priced in public markets
 - Our forecast volatility puts private equity on the security market line

2017 Capital Market Expectations—Return and Risk

Summary of Callan's Long-Term Capital Market Projections (2017 – 2026)

Asset Class	Index	PROJECTED RETURN			PROJECTED RISK		
		1-Year Arithmetic	10-Year Geometric*	Real	Standard Deviation	Sharpe Ratio	Projected Yield
Equities							
Broad Domestic Equity	Russell 3000	8.30%	6.85%	4.60%	18.25%	0.332	2.00%
Large Cap	S&P 500	8.05%	6.75%	4.50%	17.40%	0.333	2.10%
Small/Mid Cap	Russell 2500	9.30%	7.00%	4.75%	22.60%	0.312	1.55%
Global ex-U.S. Equity	MSCI ACWI ex USA	8.95%	7.00%	4.75%	21.00%	0.319	3.10%
International Equity	MSCI World ex USA	8.45%	6.75%	4.50%	19.70%	0.315	3.25%
Emerging Markets Equity	MSCI Emerging Markets	10.50%	7.00%	4.75%	27.45%	0.301	2.65%
Fixed Income							
Short Duration	Barclays G/C 1-3	2.60%	2.60%	0.35%	2.10%	0.167	2.85%
Domestic Fixed	Barclays Aggregate	3.05%	3.00%	0.75%	3.75%	0.213	3.50%
Long Duration	Barclays Long G/C	3.75%	3.20%	0.95%	10.90%	0.138	4.50%
TIPS	Barclays TIPS	3.10%	3.00%	0.75%	5.25%	0.162	3.35%
High Yield	Barclays High Yield	5.20%	4.75%	2.50%	10.35%	0.285	7.75%
Non-U.S. Fixed	Barclays Global Aggregate ex US	1.80%	1.40%	-0.85%	9.20%	-0.049	2.50%
Emerging Market Debt	EMBI Global Diversified	4.85%	4.50%	2.25%	9.60%	0.271	5.75%
Other							
Real Estate	Callan Real Estate	6.90%	5.75%	3.50%	16.35%	0.284	4.75%
Private Equity	TR Post Venture Cap	12.45%	7.35%	5.10%	32.90%	0.310	0.00%
Hedge Funds	Callan Hedge FOF Database	5.35%	5.05%	2.80%	9.15%	0.339	2.25%
Commodities	Bloomberg Commodity	4.25%	2.65%	0.40%	18.30%	0.109	2.25%
Cash Equivalents	90-Day T-Bill	2.25%	2.25%	0.00%	0.90%	0.000	2.25%
Inflation	CPI-U		2.25%		1.50%		

* Geometric returns are derived from arithmetic returns and the associated risk (standard deviation).

Source: Callan Associates

2017 Capital Market Expectations—Correlation Coefficient Matrix

Key to Constructing Efficient Portfolios

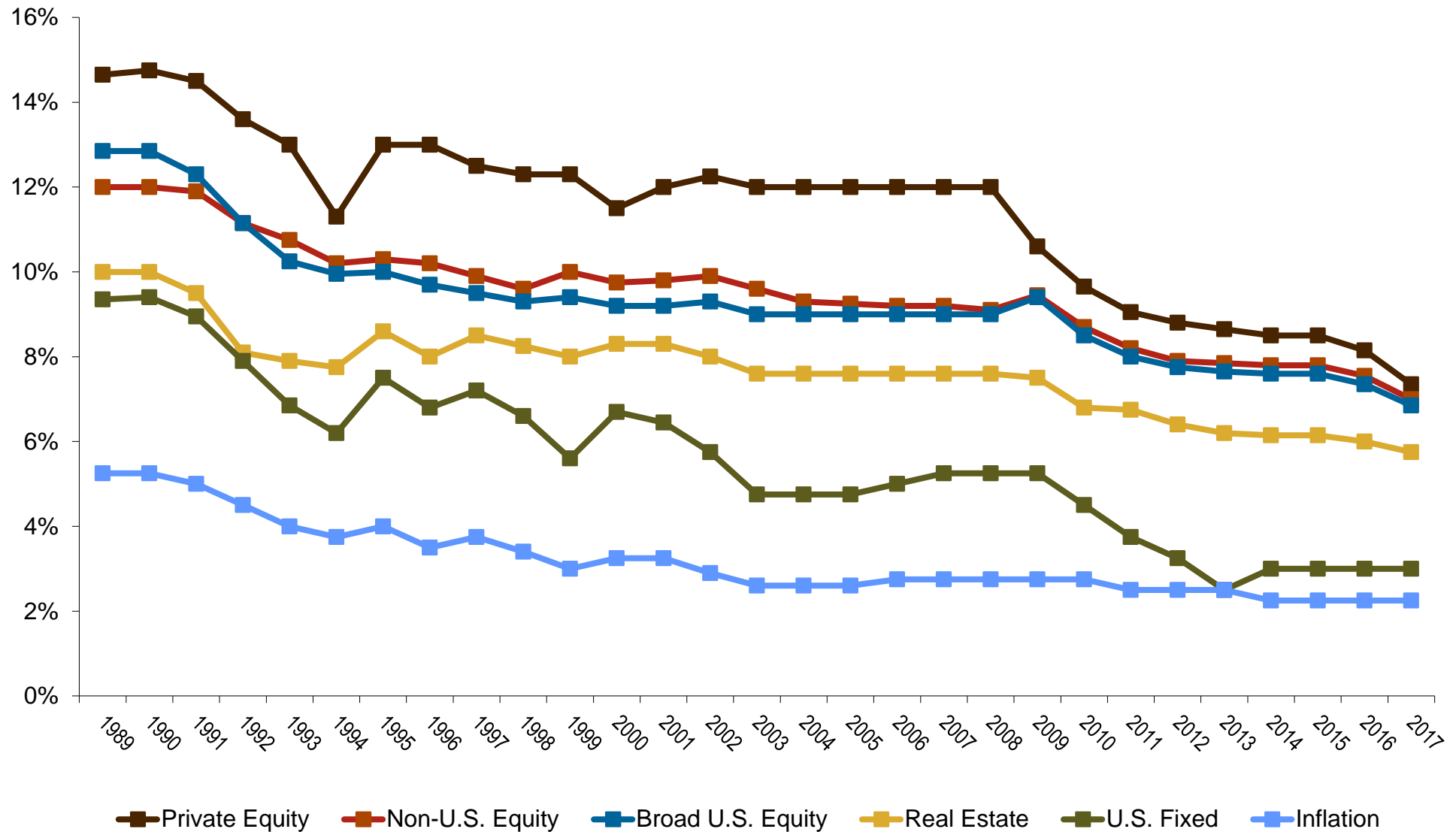
Broad US Equity	1.000																			
Large Cap	0.996	1.000																		
Small/Mid Cap	0.966	0.940	1.000																	
Global ex-US Equity	0.874	0.872	0.839	1.000																
Non-US Equity	0.840	0.840	0.800	0.987	1.000															
Em Mkts Equity	0.866	0.860	0.845	0.936	0.865	1.000														
Short Duration	-0.250	-0.240	-0.270	-0.271	-0.250	-0.290	1.000													
US Fixed	-0.110	-0.100	-0.135	-0.130	-0.115	-0.160	0.870	1.000												
Long Duration	0.133	0.136	0.119	0.104	0.117	0.066	0.730	0.925	1.000											
TIPS	-0.054	-0.045	-0.080	-0.049	-0.030	-0.085	0.525	0.600	0.528	1.000										
High Yield	0.636	0.635	0.610	0.627	0.605	0.615	-0.140	0.020	0.217	0.060	1.000									
Non-US Fixed	0.013	0.050	-0.100	0.013	0.060	-0.090	0.480	0.510	0.542	0.340	0.120	1.000								
Em Mkt Debt	0.573	0.570	0.555	0.577	0.550	0.580	-0.040	0.100	0.157	0.180	0.600	0.010	1.000							
Real Estate	0.732	0.730	0.705	0.677	0.660	0.650	-0.165	-0.030	0.188	0.000	0.560	-0.050	0.440	1.000						
Private Equity	0.948	0.945	0.915	0.927	0.895	0.910	-0.260	-0.200	0.020	-0.110	0.640	-0.060	0.570	0.715	1.000					
Hedge Funds	0.802	0.800	0.770	0.760	0.730	0.755	-0.130	0.080	0.301	0.075	0.570	-0.080	0.540	0.605	0.780	1.000				
Commodities	0.152	0.150	0.150	0.161	0.155	0.160	-0.220	-0.100	-0.041	0.120	0.100	0.050	0.190	0.200	0.180	0.210	1.000			
Cash Equivalents	-0.043	-0.030	-0.080	-0.040	-0.010	-0.100	0.300	0.100	-0.048	0.070	-0.110	-0.090	-0.070	-0.060	0.000	-0.070	0.070	1.000		
Inflation	-0.010	-0.020	0.020	0.010	0.000	0.030	-0.200	-0.280	-0.285	0.180	0.070	-0.150	0.000	0.100	0.060	0.200	0.400	0.000	1.000	
	Broad US Eq	Large Cap	Sm/Mid Cap	Global ex-US	Non-US Equity	Em Mkt Eq	Sht Dur	US Fixed	Long Duration	TIPS	High Yield	Non-US Fixed	Em Mkt Debt	Real Estate	Private Equity	Hedge Funds	Comm	Cash Equiv	Inflation	

- Relationships between asset classes is as important as standard deviation.
- To determine portfolio mixes, Callan employs mean-variance optimization.
- Return, standard deviation and correlation determine the composition of efficient asset mixes.

Source: Callan Associates

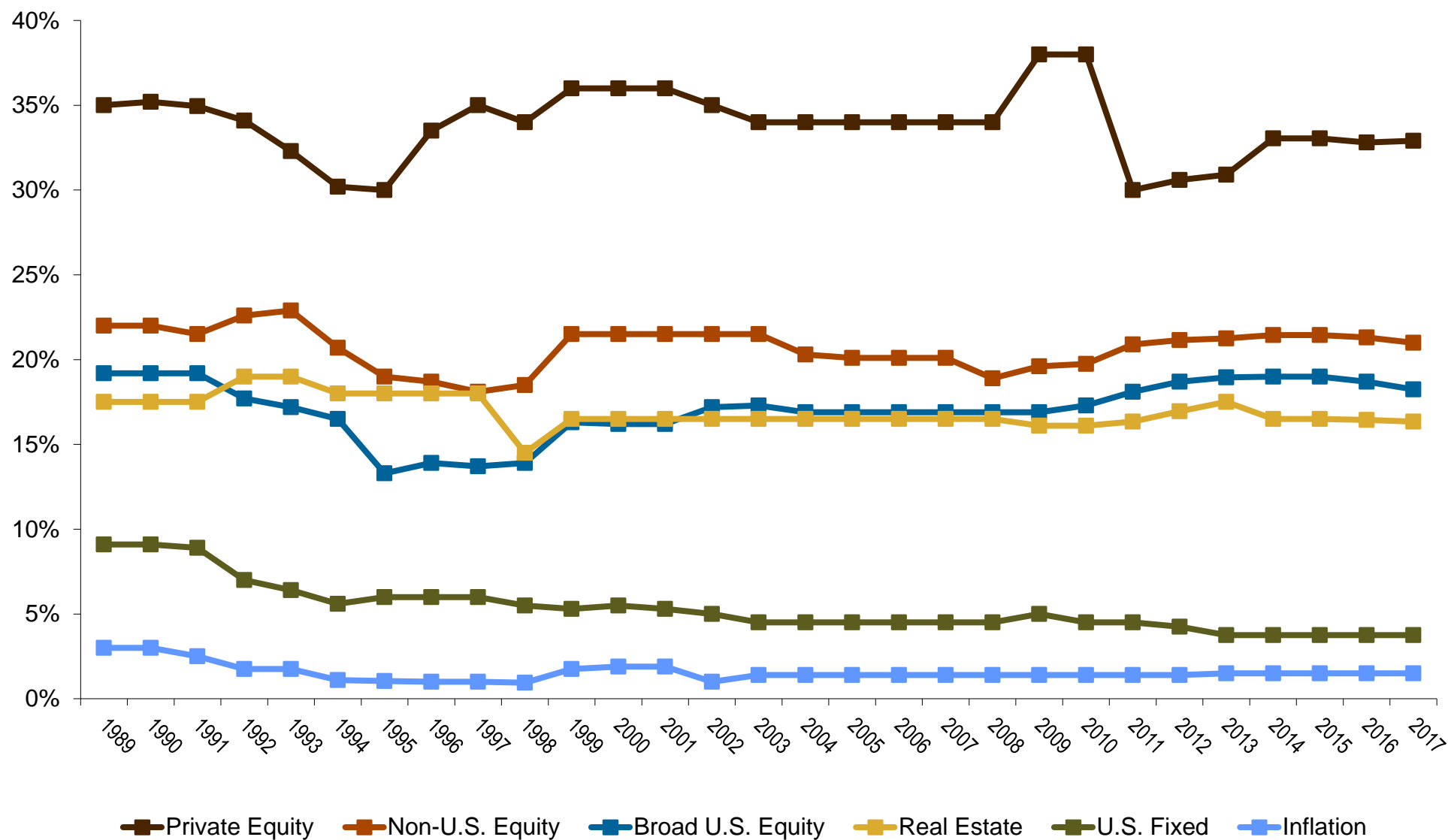
Callan's Historical Return Projections

1989 - 2017



Callan's Historical Risk Projections

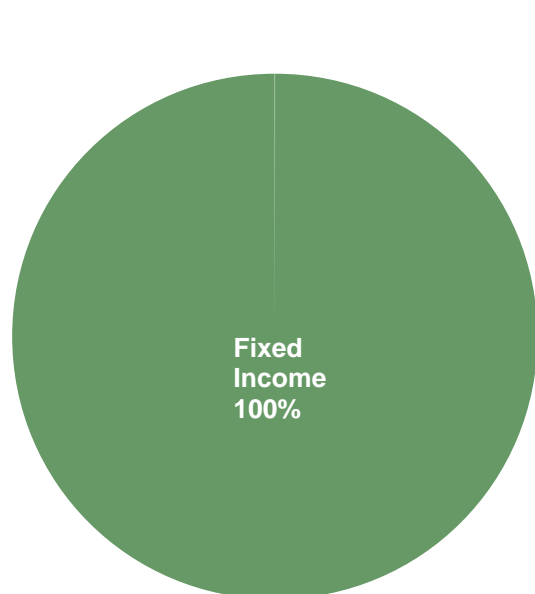
1989 - 2017



Increasing Volatility and Complexity

Expected Portfolio Returns Over Past 20 Years

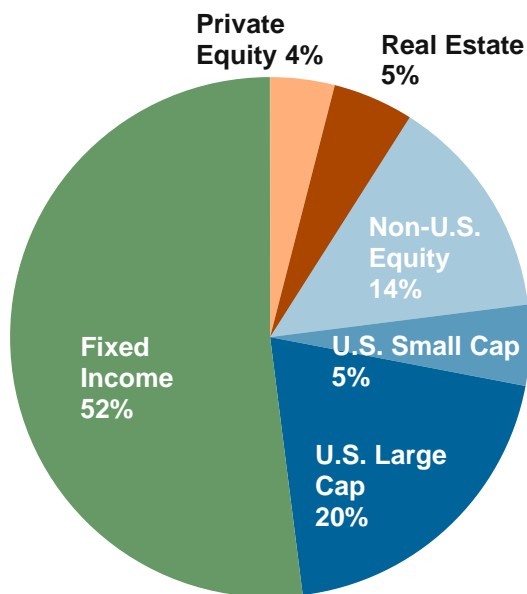
Increasing Complexity



1995

Expected Return: 7.5%
Projected Volatility: 6.0%

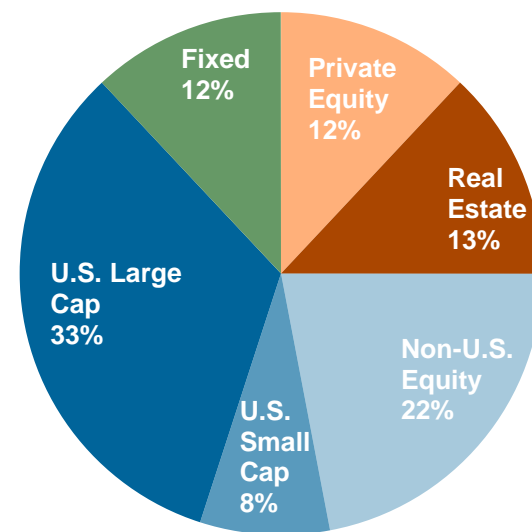
Actual Return (1995-2004): 7.7%
Actual Vol (1995-2004): 4.0%



2005

Expected Return: 7.5%
Projected Volatility: 8.9%

Actual Return (2005-2014): 6.2%
Actual Vol (2005-2014): 7.7%



2015

Expected return: 7.5%
Projected Volatility: 17.2%

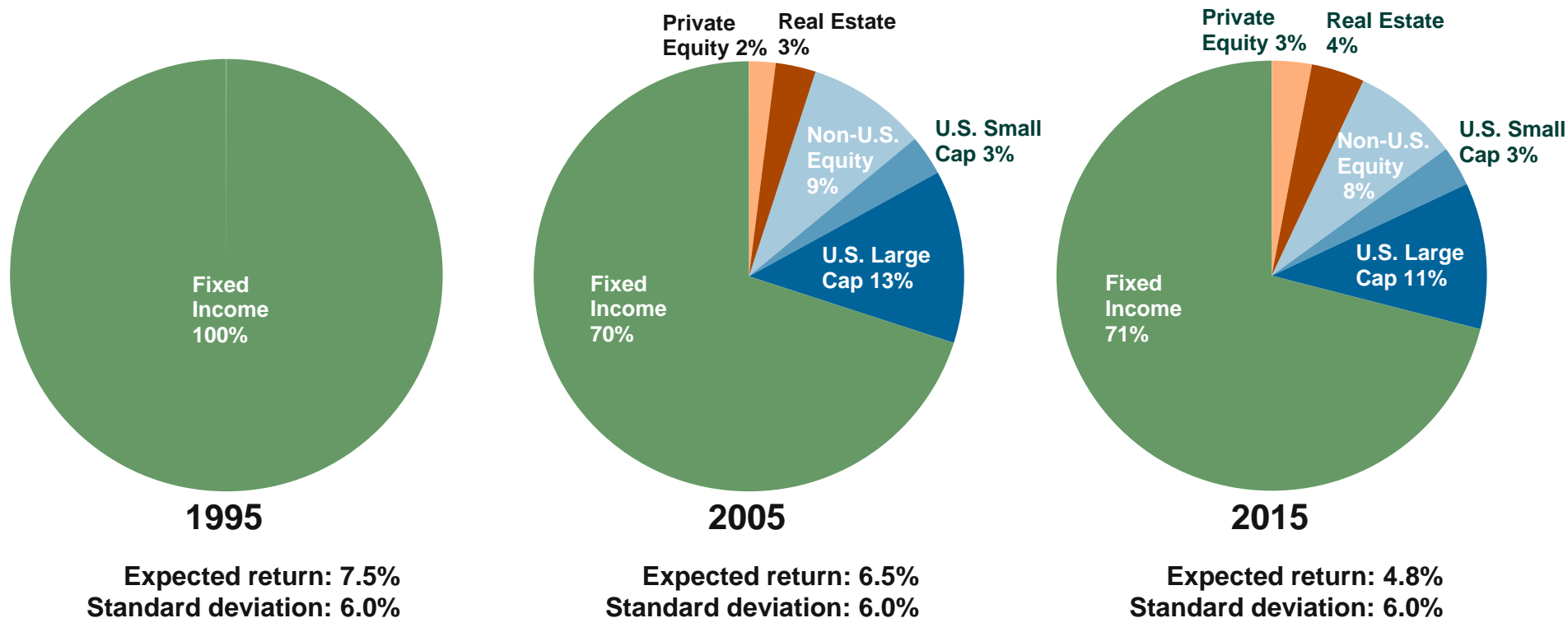
Increasing Risk

Based on Callan's 2017 – 2026 Capital Market assumptions, no portfolio produces an expected return of 7.5%.

Same Risk, Decreasing Returns

When target risk is held at 6.0%, expected returns fall from 7.5% in 1995 to 4.8% in 2015

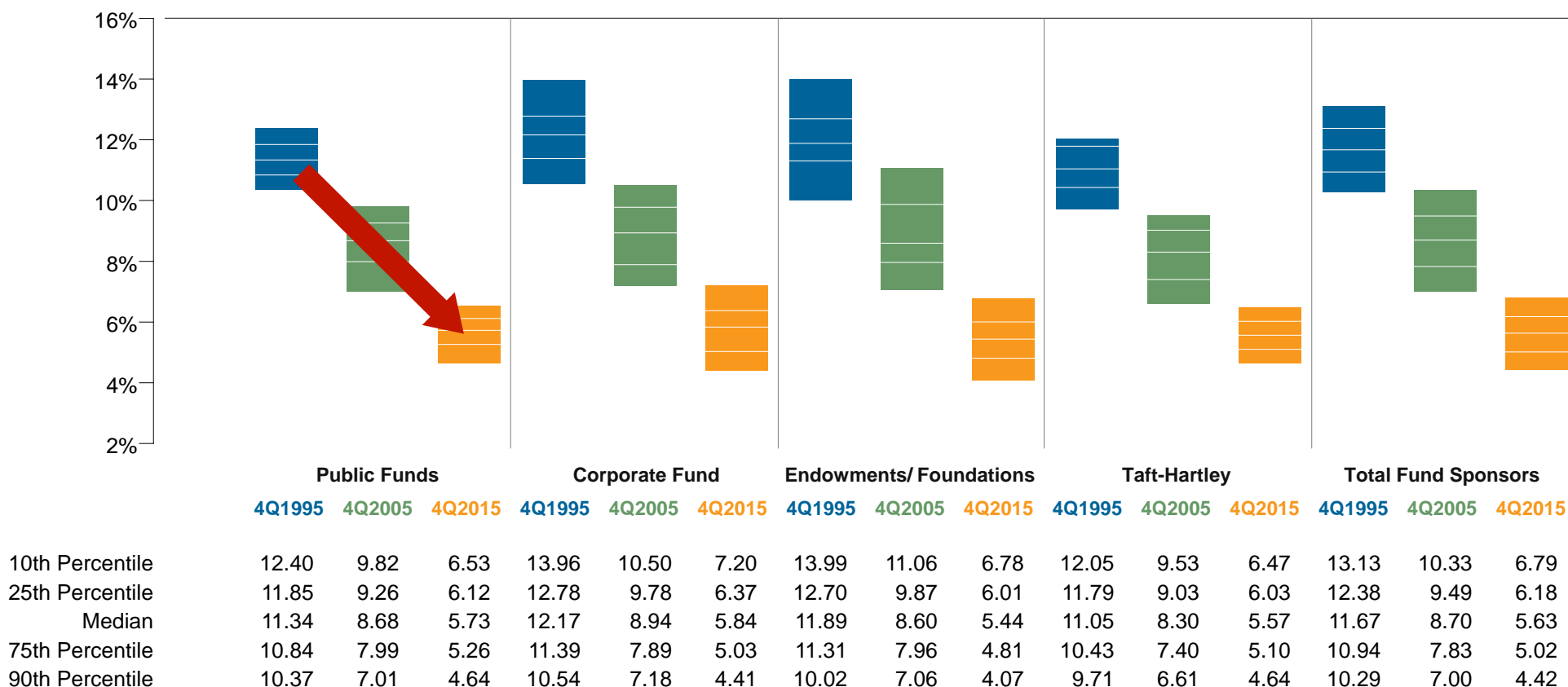
Increasing Complexity →



→ Returns Lowered Over Time

What Returns Did Fund Sponsors Actually Achieve?

10-Year Returns by Fund Sponsor Type: Point in Time Comparison

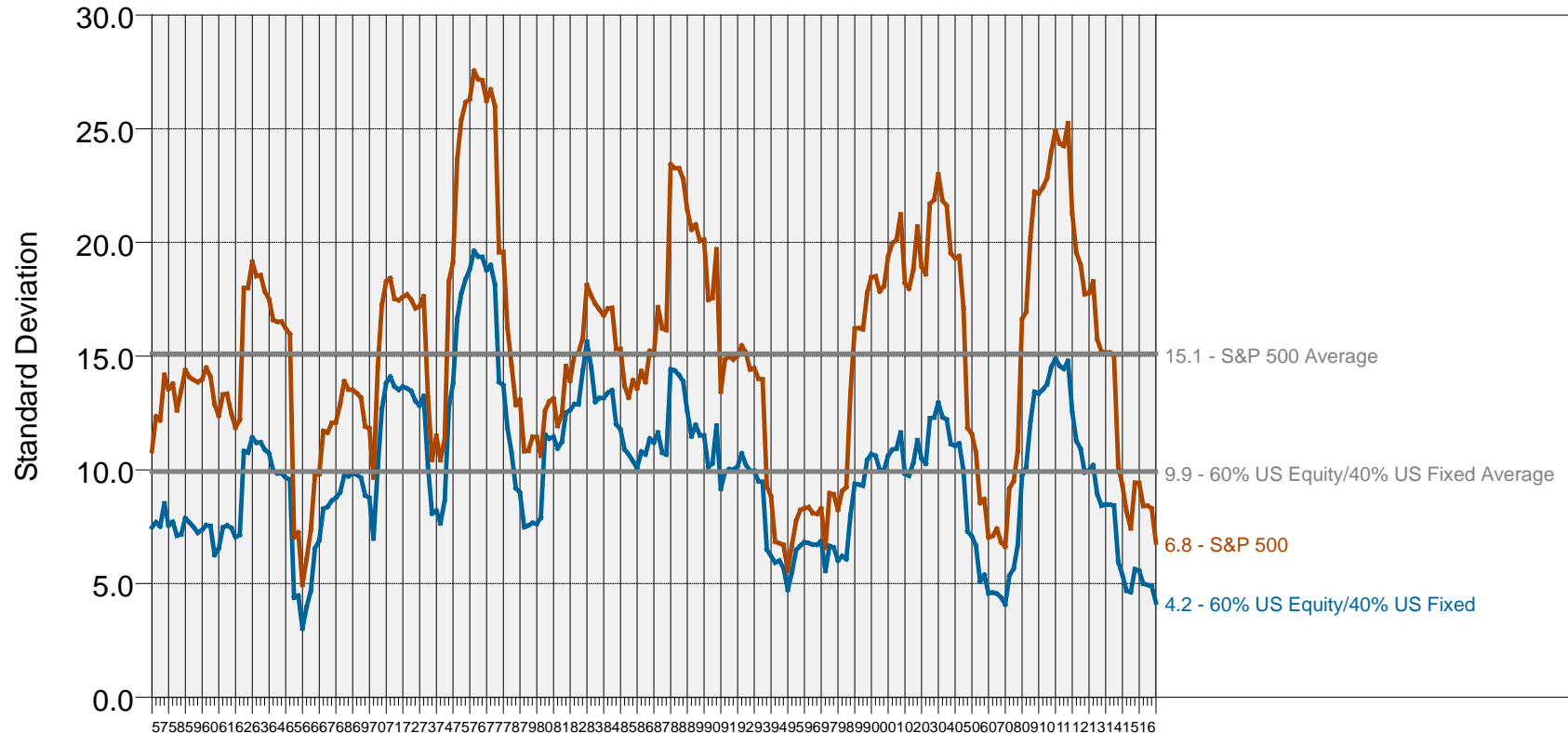


Source: Callan. Callan's database includes the following groups: public defined benefit, corporate defined benefit, endowments/foundations, and Taft-Hartley plans. Approximately 10-15% of the database constituents are Callan's clients. All database group returns presented gross of fees. Past performance is no guarantee of future results.

Recent Volatility Has Been Suppressed - Beware!

3-Year Vol is Less Than Half the Long-Term Average

Rolling 12 Quarter Standard Deviation
for 60 Years Ended December 31, 2016



- 3-year standard deviation for a 60% US Stock/40% US Bond portfolio is below 5%; long-term average is close to 10%. Planning for the recent low level of volatility to persist may be ill-advised.

Source: Callan Associates

2017 Capital Market Expectations – Efficient Mixes

Subdued Returns Even for Risky Portfolios

Asset Mix Alternatives
Optimization Set: 2017

Portfolio Component	Min	Max	Mix 1	Mix 2	Mix 3	Mix 4	Mix 5
Broad US Equity	0.0	100.0	9.2	13.7	18.6	24.1	30.4
Global ex US Equity	0.0	100.0	7.2	10.5	14.1	18.2	22.9
Domestic Fixed	0.0	100.0	65.1	54.8	43.6	31.1	16.5
High Yield	0.0	100.0	6.2	5.8	5.5	5.0	4.6
Real Estate	0.0	100.0	3.4	5.0	6.7	8.6	10.8
Hedge Funds	0.0	100.0	6.9	7.2	7.4	7.6	7.9
Private Equity	0.0	100.0	2.0	3.0	4.1	5.4	6.9
Totals			100.0	100.0	100.0	100.0	100.0
Projected Arithmetic Return			4.57%	5.15%	5.79%	6.51%	7.34%
Projected Standard Deviation			5.47%	7.18%	9.22%	11.60%	14.42%
10 Yr. Geometric Mean Return			4.50%	5.00%	5.50%	6.00%	6.50%
IG Fixed			65.1	54.8	43.6	31.1	16.5

- Arithmetic returns on the first line beneath the table illustrate the single period, 10-year return.
- For planning purposes, we focus on the 10-year geometric return (third line beneath the table) as that is the compound rate or return that incorporates return volatility over the 10-year period.

Long-Term Vision and Short-Term Reality

- Greatest danger—Investors take on additional risk to compensate for capital market returns that are likely to be below historical averages. We do not believe investors are likely to be compensated for such risk taking in the shorter term.
- Fixed income is a conundrum for investors. No other investment offers the same anchor to windward and protection in a flight to quality. Yet current yields and the prospect for rising rates spell dismal total returns.
- Stocks appear to be the best spot in the capital markets given the current environment, but are not without substantial risk.
- Other strategies to manage risk:
 - Active management in equity and fixed income to take advantage of opportunities and protect in a volatile environment.
 - Global opportunities in equity and debt; yields, currency.
 - Absolute return strategies to hedge market risk, both long-only and hedged.
 - Private markets.
 - Lower expectations.
- Callan is working with investment staff to evaluate potential adjustments in Callan's standard capital market assumptions that better reflect ARMB's specific investment structure. These results will be presented at a future ARM Board meeting.

Tortoise Capital Advisors, LLC

Mandate: Master Limited Partnerships

Hired: 2012

Firm Information	Investment Approach	Total ARMB Mandate
<p>Tortoise Capital was founded in 2002 to provide energy investment management services. They manage publicly-traded closed-end funds, mutual funds and separately managed accounts.</p> <p>As of 12/31/2016, Tortoise Capital's total assets under management were \$16.3 billion.</p> <p>Key Executives: Ken Malvey, <i>Managing Director</i> Jenny Park, <i>Client Service Manager</i></p>	<p>Tortoise Capital Advisors is highly focused on midstream MLP investments that transport, store, process and distribute crude oil, refined petroleum products (gasoline, diesel and jet fuel) and natural gas. Tortoise seeks to identify and invest predominantly in long-haul, fee-based pipeline MLPs that generate stable, fee-based revenues with attractive growth prospects and controlled risk. Understanding the management teams, quality of underlying assets and opportunities available for growth are paramount to success. The firm maintains a long-term, buy and hold philosophy with low turnover in an effort to achieve a portfolio characterized by high current yield, high growth and low volatility.</p> <p>Benchmark: Alerian MLP Index (Total Return)</p>	<p>Assets Under Management: 12/31/2016: \$272,716,870</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>	<u>6-Years Annualized</u>
Tortoise Capital	3.03%	16.88%	-0.02%	-	-
Alerian MLP Index (Tot Ret)	2.04%	18.31%	-5.80%	2.25%	4.10%



Steady wins®

State of Alaska Retirement and Benefits Plans

Energy infrastructure

Summary

- Absolute performance inception to date: 8.4%¹
- Relative performance vs. Alerian MLP Index inception to date: outperformed by 6.5%¹
- Benefiting from emphasis on larger, investment grade, more stable fee-based sectors
- We expect 12 - 14% MLP market returns for next 12 months (7.1% MLP market yield plus 5 - 7% growth)²
- Intermediate and long-term growth outlook remains favorable in our view

¹As of 1/31/2017. Returns presented are gross of fees. Please see important disclosures at end of presentation.

²As of 12/31/2016.

Past performance is no guarantee of future results.

Organizational update

Tortoise Capital Advisors

Our firm

- Manages approximately \$16.3 billion with decade-plus history
- We only develop investment strategies in which we invest ourselves

Our focus

- Investing across the entire energy value chain
- Long-term investment philosophy

Our process

- Emphasizes high-quality investments
- Fundamental bottom-up approach and proprietary models

Our people

- Deep and experienced team of 79
- Employees own more than 30% of the management company

As of 12/31/2016

The Tortoise team

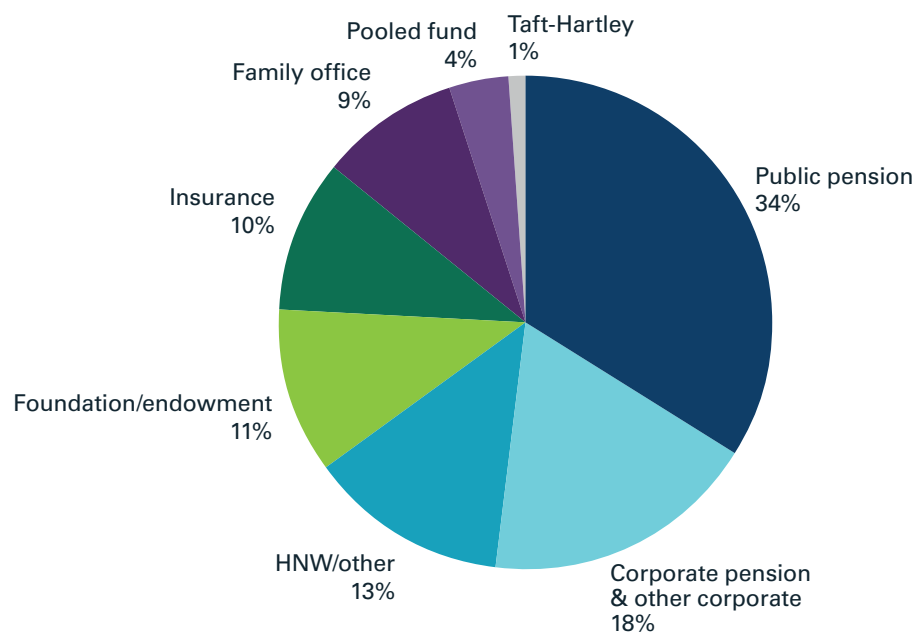


As of 12/31/2016

*We have three additional portfolio management professionals who are devoted to our renewable private equity affiliate; they are also dual employees of Tortoise Capital Advisors.

Breakout of institutional clients

SMA breakdown by client type
\$8.3 billion



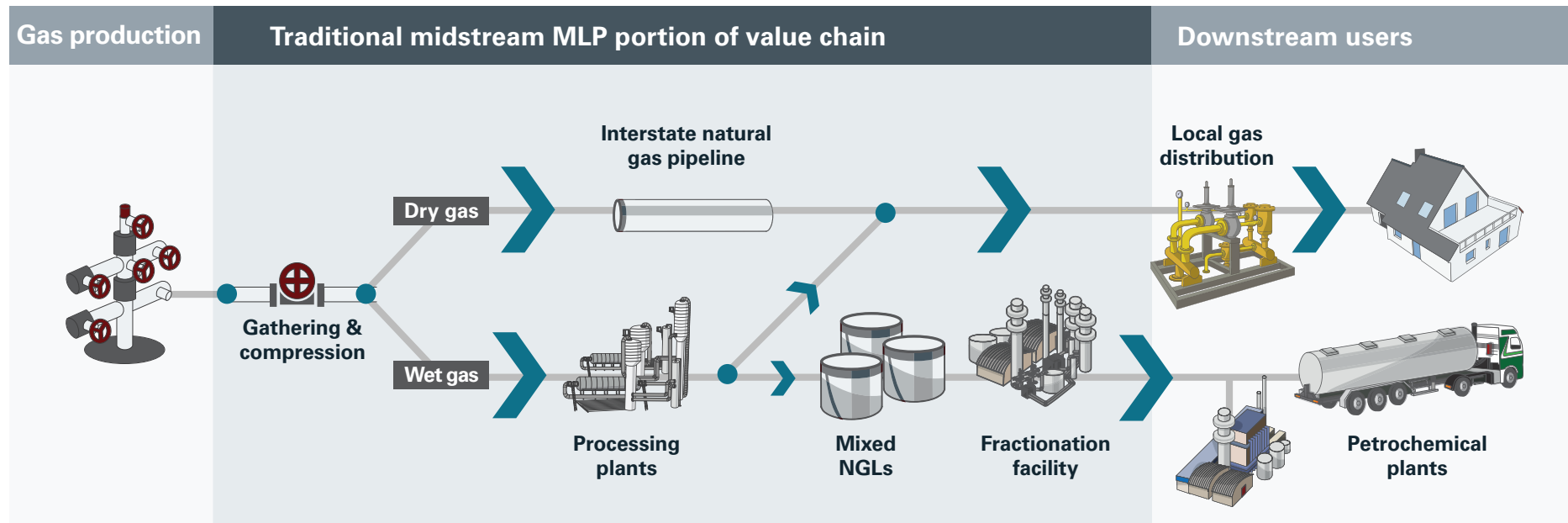
As of 12/31/2016
Due to rounding, totals may not always equal 100%.

Strategy and performance

Energy value chain: midstream focus

Midstream MLPs are publicly traded companies operating essential energy toll roads

- Pipeline companies generally have steady, recurring, fee-based cash flows with limited direct commodity price exposure
- Cash flow generally grows with the economy, population and project development and acquisitions



MLP SMA investment strategy

We have consistently pursued a strategy focused on long-haul, fee-based, investment grade companies for their compelling risk and return characteristics

Own strategic assets critical to sustainability and growth of economic activity

Emphasize high quality companies

- Long-haul pipeline asset footprint
- Proven management teams
- Fee-based cash flow generation with investment grade metrics

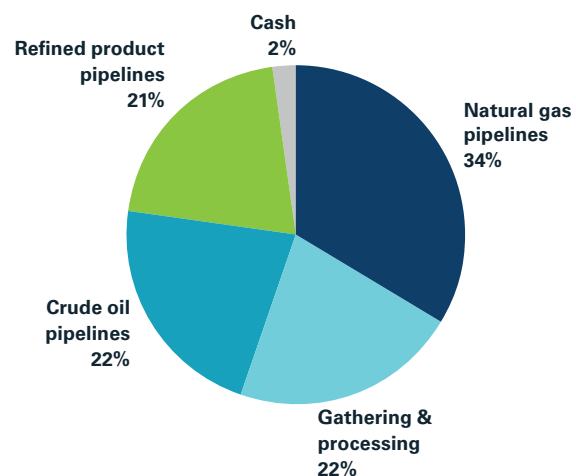
Prefer internal and dropdown growth potential with low cost of capital

Account portfolio vs. index

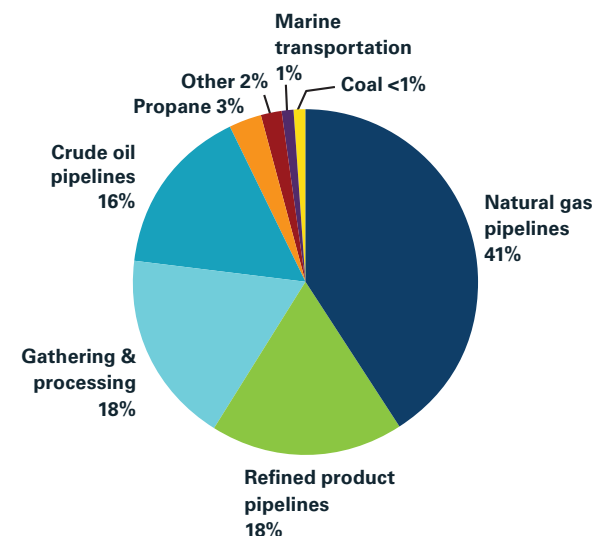
Midstream strategy emphasizes high-quality companies that generate recurring cash flows

State of Alaska Retirement and Benefits Plans portfolio

Long-haul pipelines	76%
Fee-based cash flows	86%
Investment grade rating	77%
Capitalization above \$1bn	100%
Average annual turnover	20-25%
Number of names	26



MLP market



As of 1/31/2017

MLP market represented by the Alerian MLP Index. Due to rounding, totals may not always equal 100%. Please see important disclosures at end of presentation.

Account performance summary

	Month to date	Fiscal year to date ¹	1 year	3 year	Since inception ²
Account (gross of fees)	4.63	10.37	40.23	0.75	8.40
Account (net of fees)	4.63	10.03	39.39	0.12	7.73
Alerian MLP Index	4.89	8.18	39.60	(4.48)	1.94
Over/under performance (gross)	(0.26)	2.19	0.63	5.23	6.46
Over/under performance (net)	(0.26)	1.85	(0.21)	4.60	5.79
Tortoise MLP Index[®]	3.59	11.10	47.12	(2.23)	4.28
Wells Fargo MLP Index	3.93	10.70	44.50	(3.57)	3.09
S&P 500[®] Index	1.90	9.87	20.04	10.85	14.47

Portfolio activity summary From 10/31/2012 to 1/31/2017

Portfolio value on 10/31/2012	\$ -
Contributions	232,500,000
Withdrawals	(1,514)
Realized gains/(losses)	(1,954,130)
Unrealized gains/(losses)	10,767,462
Interest	115,708
Dividends/distributions	44,752,689
Management fees paid from account	(409,434)
Expenses	-
Portfolio value on 1/31/2017	\$285,770,781

All returns through 1/31/2017. Annualized for periods over one year. ¹Fiscal year to date: 6/30/2016 to 1/31/2017. ²Performance inception date: 11/30/2012. It is not possible to invest directly in an index. Please see important disclosures at end of presentation.

Past performance is no guarantee of future results.

Performance drivers (last 12 months)

Positive contributors

Sub-sector/thematic performance

- Positive selection effect, natural gas pipelines (up 35%)
- Underweight propane (up 19%)
- Underweight oil & gas production (down 8%)

Negative contributors

Sub-sector/thematic performance

- Negative selection effect, refined product pipelines (up 32%)
- Held cash in a positive return environment
- Underweight marine transportation (up 67%)

**Overall, outperformed
MLP market by 0.6%**

Individual security selection

- Overweight ETE (up 127%)
- Underweight EPD (up 26%)
- Overweight WES (up 100%)
- Overweight OKE (up 81%)

Individual security selection

- Underweight WPZ (up 111%)
- Underweight DCP (up 131%)
- Held cash in a positive return environment
- Overweight PSXP (up 4%)

As of 1/31/2017

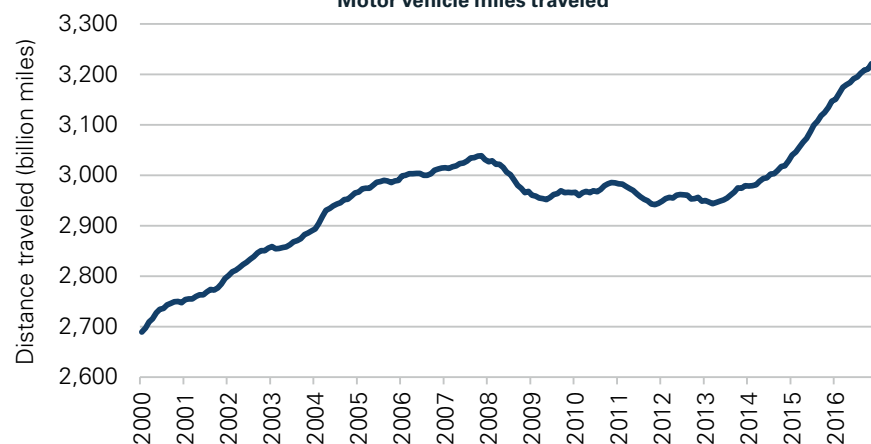
Returns presented are gross of fees as compared to the Alerian MLP Index.

Current conditions and market outlook

Midstream fundamentals have remained strong

Refined product pipelines

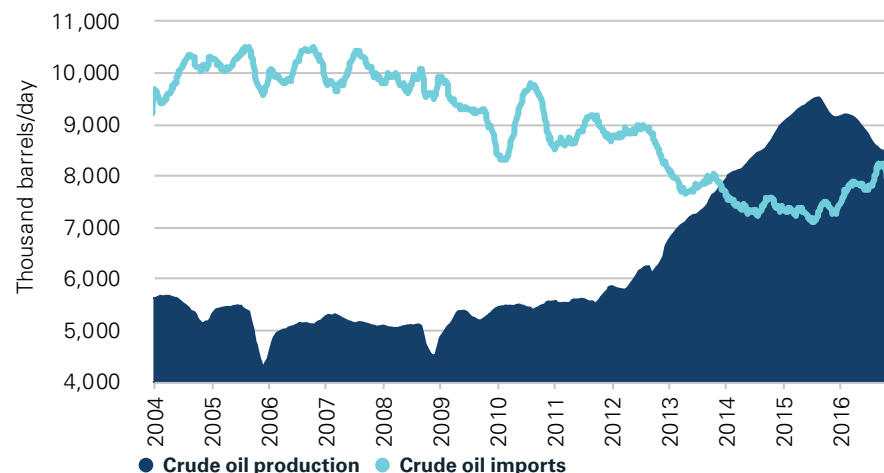
- Lower gasoline prices have increased demand
- Motor vehicle miles traveled**



Source: U.S. Department of Transportation: Federal Highway Administration as of 11/30/2016

Crude oil pipelines

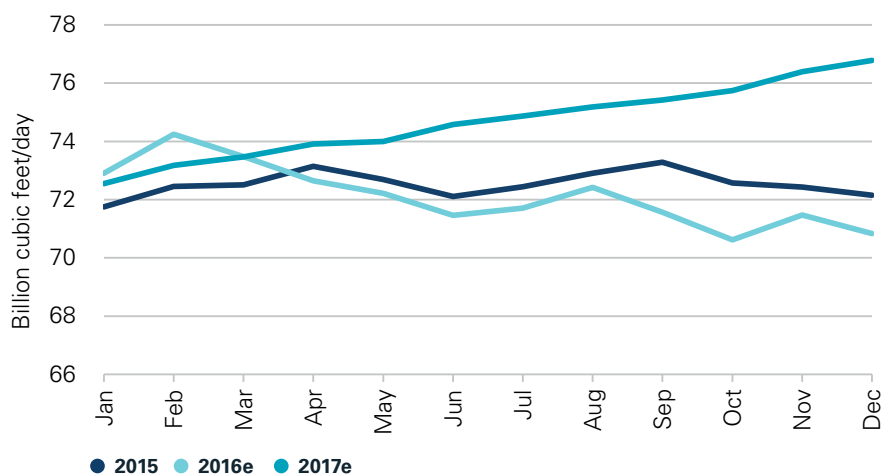
- Technology has driven domestic production



Source: Bloomberg as of 12/31/2016

Natural gas pipelines

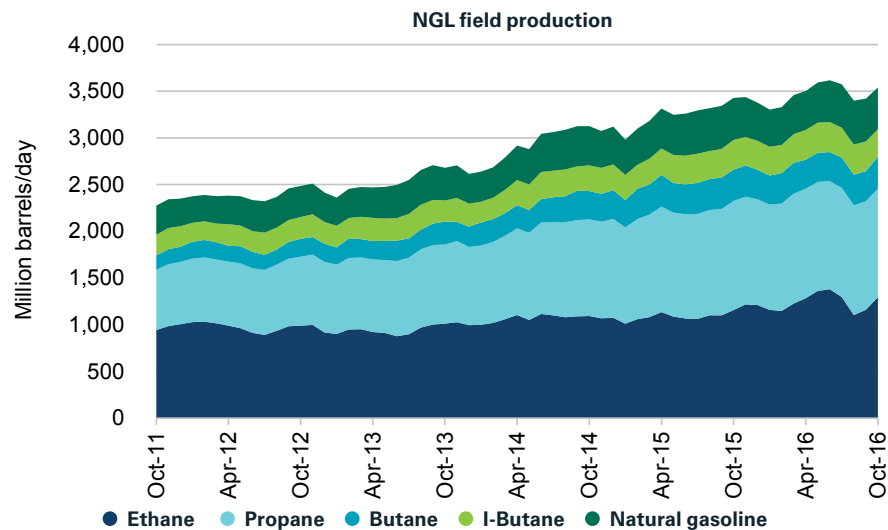
- Domestic production has continued to drive volumes



Source: Bentek as of 12/23/2016

Gathering & processing

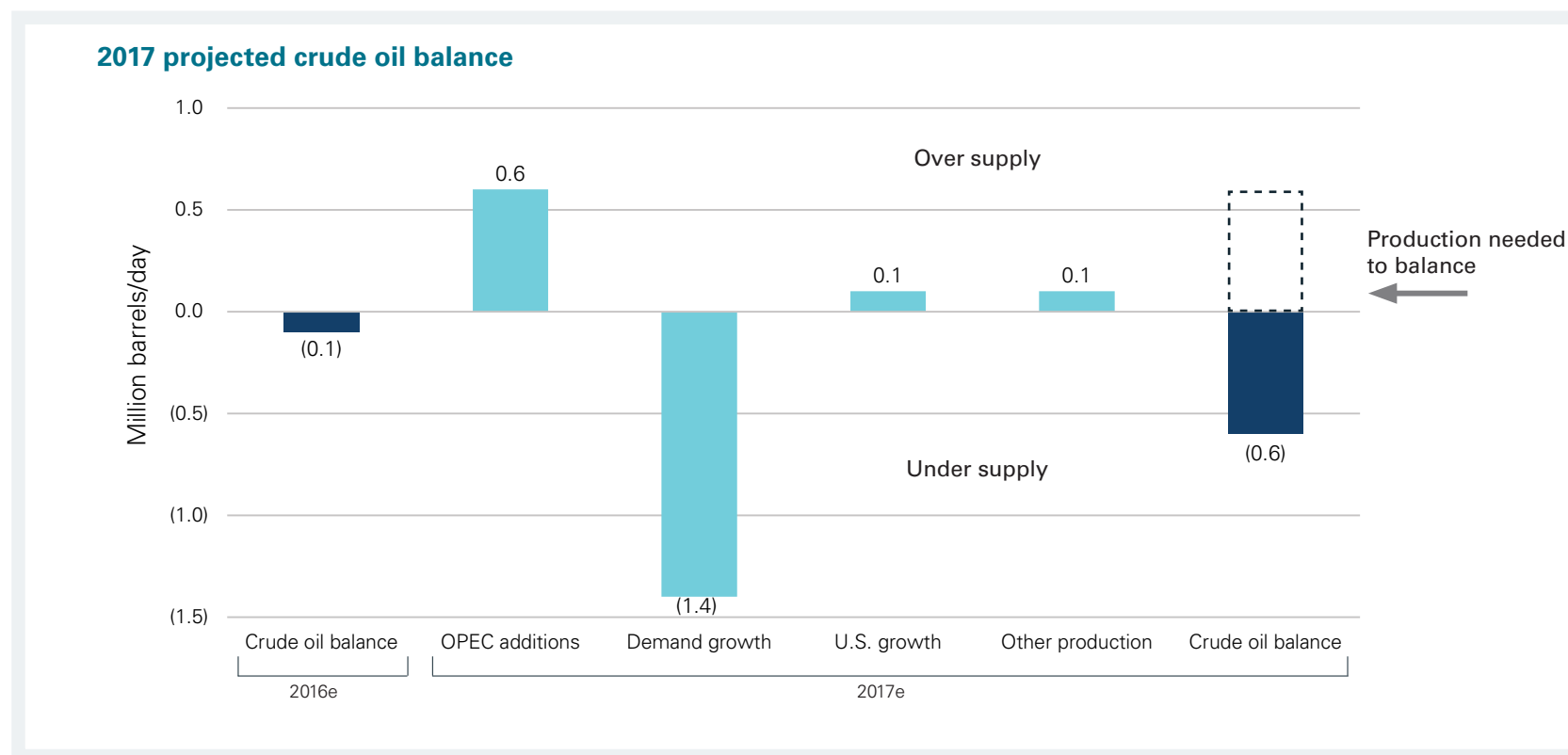
- Boom in natural gas production has driven NGL (natural gas liquids) market



Source: EIA as of 10/31/2016

Crude oil outlook: rebalance underway

- Forecasted robust demand growth in 2017, combined with moderating production in the U.S. and OPEC, is expected to create more balance in global oil markets
- OPEC is voluntarily cutting production volumes during the first six months of 2017 and had been producing near capacity pre-cut
- As the volume of crude oil held in storage returns to more normal levels, U.S. production is expected to be called upon to fill the gap in worldwide demand

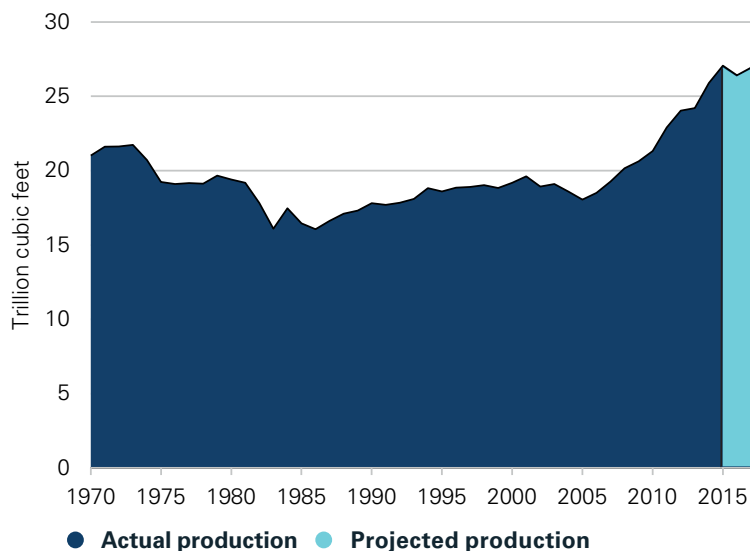


Source: Bloomberg, EIA, IEA, RSEG, OPEC, PAA, EPD, Cornerstone Analytics, Barclays, Platts, Energy Aspects, Guggenheim and Scotia as of 12/31/2016
Numbers have been rounded for simplification.

Natural gas: also part of the story

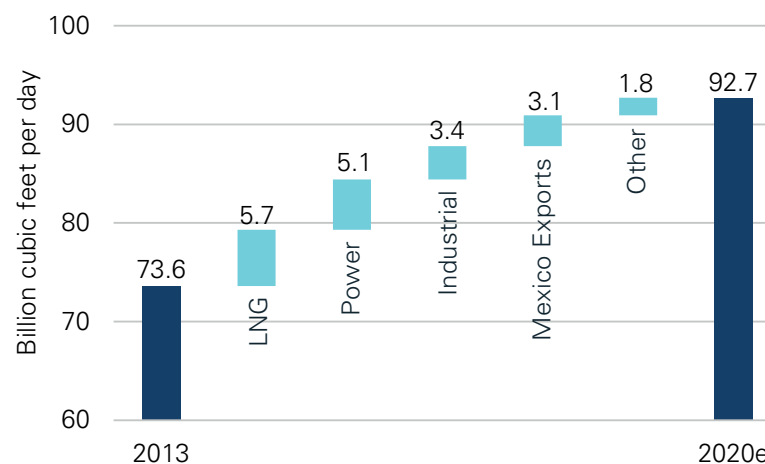
- North American shale reservoirs are estimated to harbor enough natural gas to meet U.S. demand for 100 years
- Power generation, industrial, chemical and transportation sectors expected to drive significant demand potential for abundant, relatively clean, low-cost natural gas and NGLs

Significant unconventional production growth



Source: EIA as of December 2016. Data projected from 2016 to 2017e.

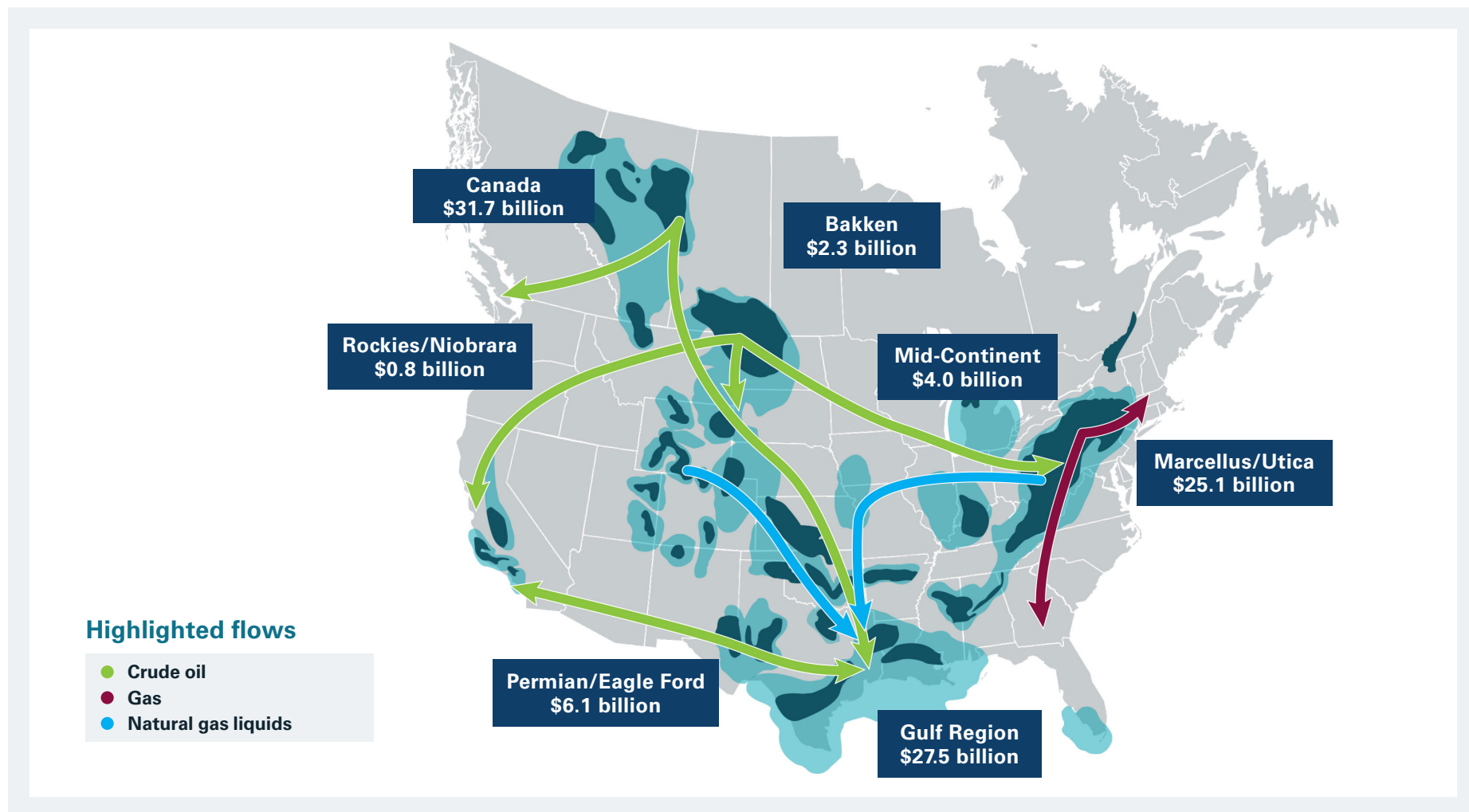
Consumption growing with supply



Source: Wood Mackenzie as of June 2016. Note: LNG = liquefied natural gas.

Midstream growth initiatives 2016e - 2018e

Approximately \$120 billion in pipeline and related projects

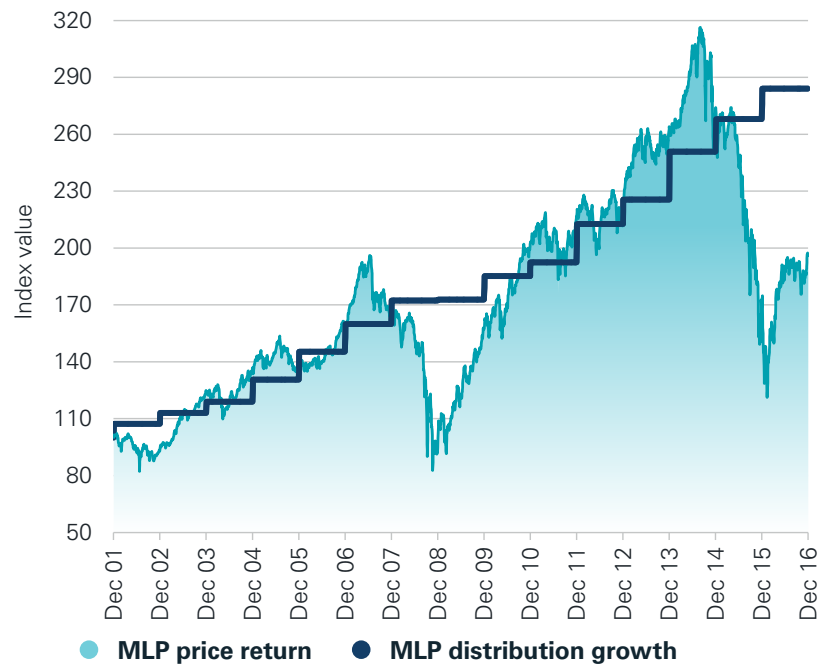


Source: Tortoise Capital Advisors as of 12/31/2016

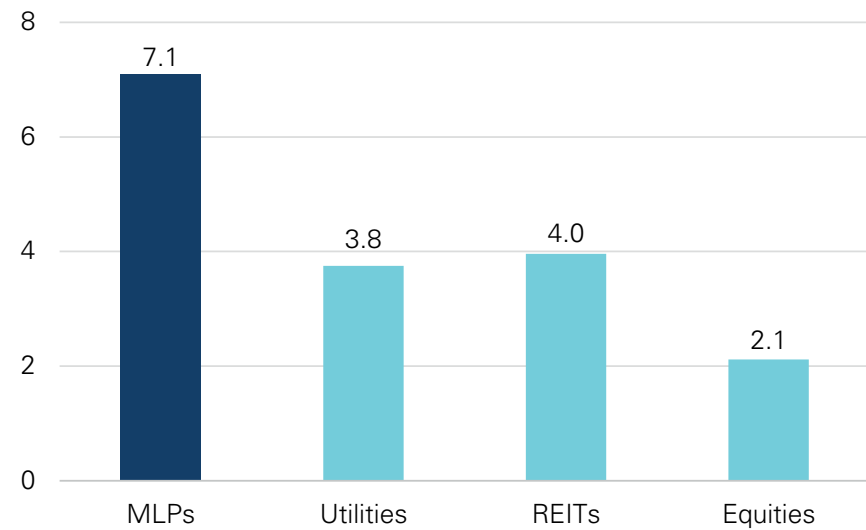
Note: Total capital investment also includes miscellaneous other projects totaling approximately \$25 billion. The projections on this page are based on industry estimates and are no guarantee of future outcomes.

Total return drivers

Growing distributions



Attractive MLP market yield (%)



Source: Bloomberg, NAREIT (REITs yield) and Tortoise Capital Advisors as of 12/31/2016
Please see important disclosures at end of presentation.

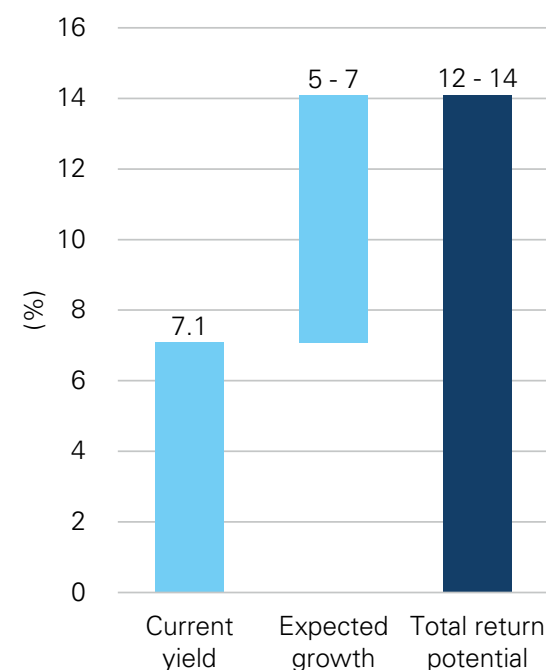
Valuation and outlook

Snapshot

Midstream MLPs	EV/EBITDA	P/DCF	
5 year median	12.1x	11.7x	
2017e	10.0x	7.7x	
		Spread	
MLPs	Yields	10 year treasury	BB bonds
5 year median	6.1%	414 bps	135 bps
Current	7.1%	464 bps	238 bps

MLPs	Avg. distribution growth	Est. distribution growth
2011 - 2015	6.1%	
2017e		5 - 7%

Next 12 months MLP market total return outlook



Source: Tortoise Capital Advisors and Bloomberg as of 12/31/2016

Please see important disclosures at end of presentation. MLP category represented by the Tortoise MLP Index®. EV/EBITDA = Enterprise value/Earnings before interest, taxes, depreciation and amortization. P/DCF = Price/Distributable cash flow.

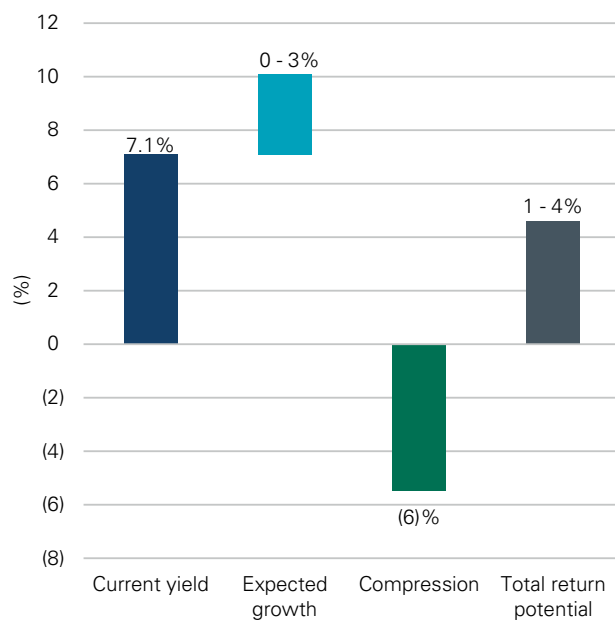
Next 12 months scenario analysis

Low case

Assumptions:

- Current yield: 7.1%
- Growth: 0 - 3%
- Exit yield: 7.5%
- Implied compression: (6)%

Implied total return: 1 - 4%

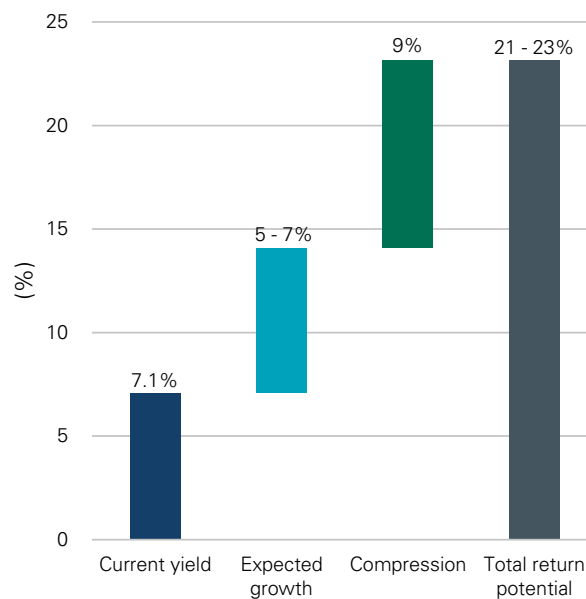


Medium case

Assumptions:

- Current yield: 7.1%
- Growth: 5 - 7%
- Exit yield: 6.5%
- Implied compression: 9%

Implied total return: 21 - 23%

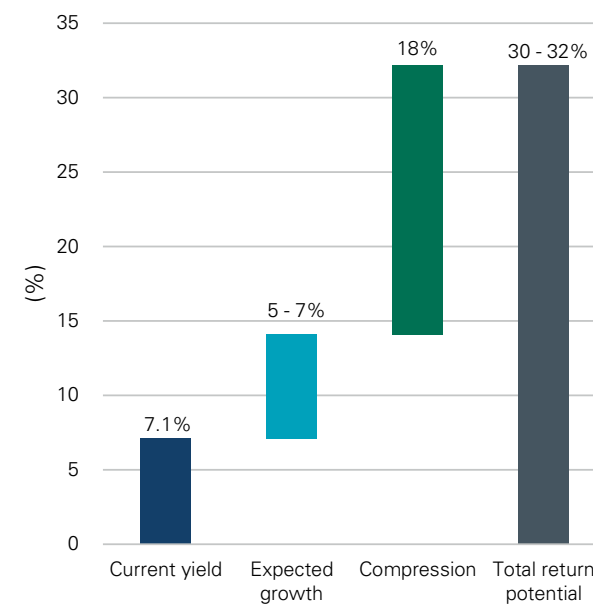


High case

Assumptions:

- Current yield: 7.1%
- Growth: 5 - 7%
- Exit yield: 6.0%
- Implied compression: 18%

Implied total return: 30 - 32%



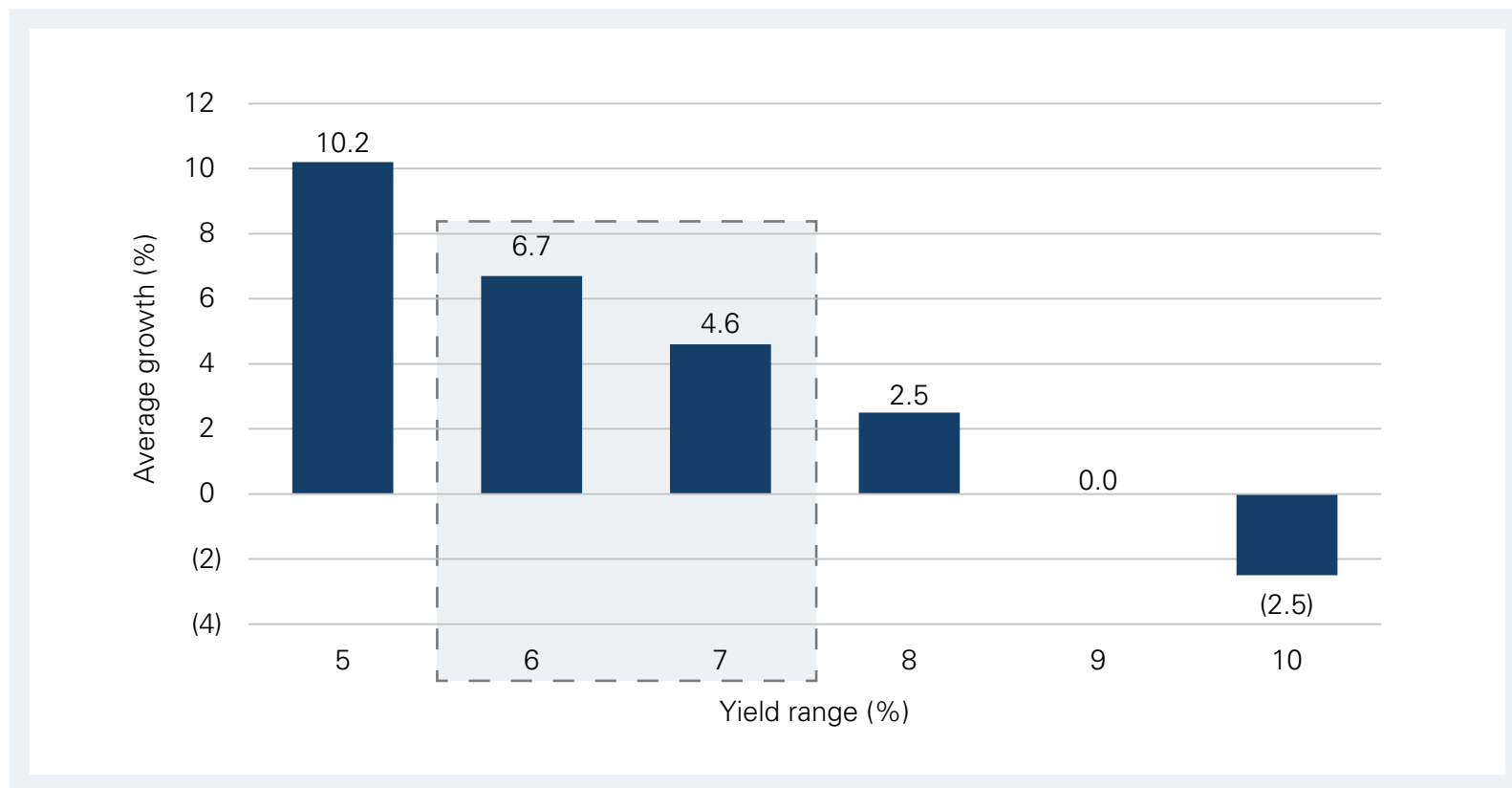
Source: Bloomberg and Tortoise Capital Advisors as of 12/31/2016

Please see important disclosures at end of presentation. Current yield represented by the Tortoise MLP Index®.

Past performance is no guarantee of future results.

MLP historical yield and projected growth

- Current yield of 7.1%
- Distribution growth outlook of 5 - 7% expected over next 12 months implies yield range of 6 - 7%
 - Consistent with exit yield sensitivity analysis



Current yield as of 12/31/2016. Quarterly data: 1Q10 to 3Q16. Source: Bloomberg and Tortoise Capital Advisors. MLP category represented by the Tortoise MLP Index®. Please see important disclosures at end of presentation.

Past performance is no guarantee of future results.

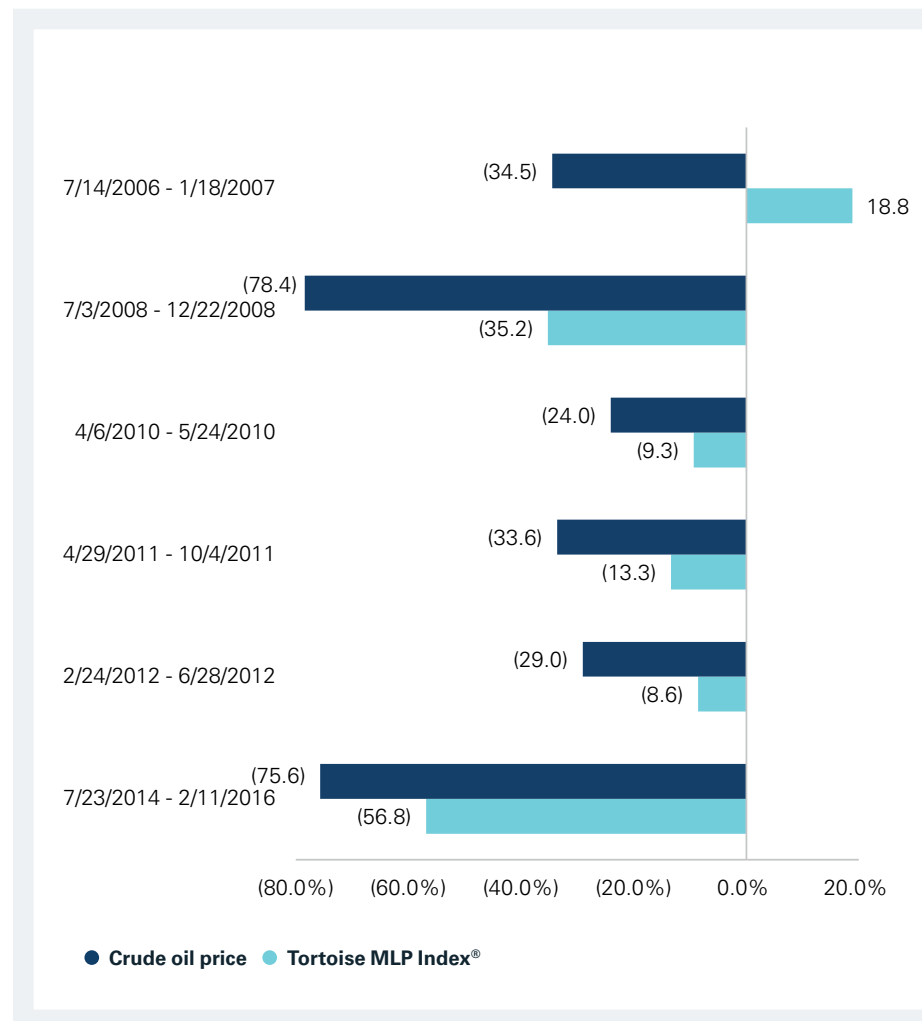
Appendix

Account portfolio as of 1/31/2017

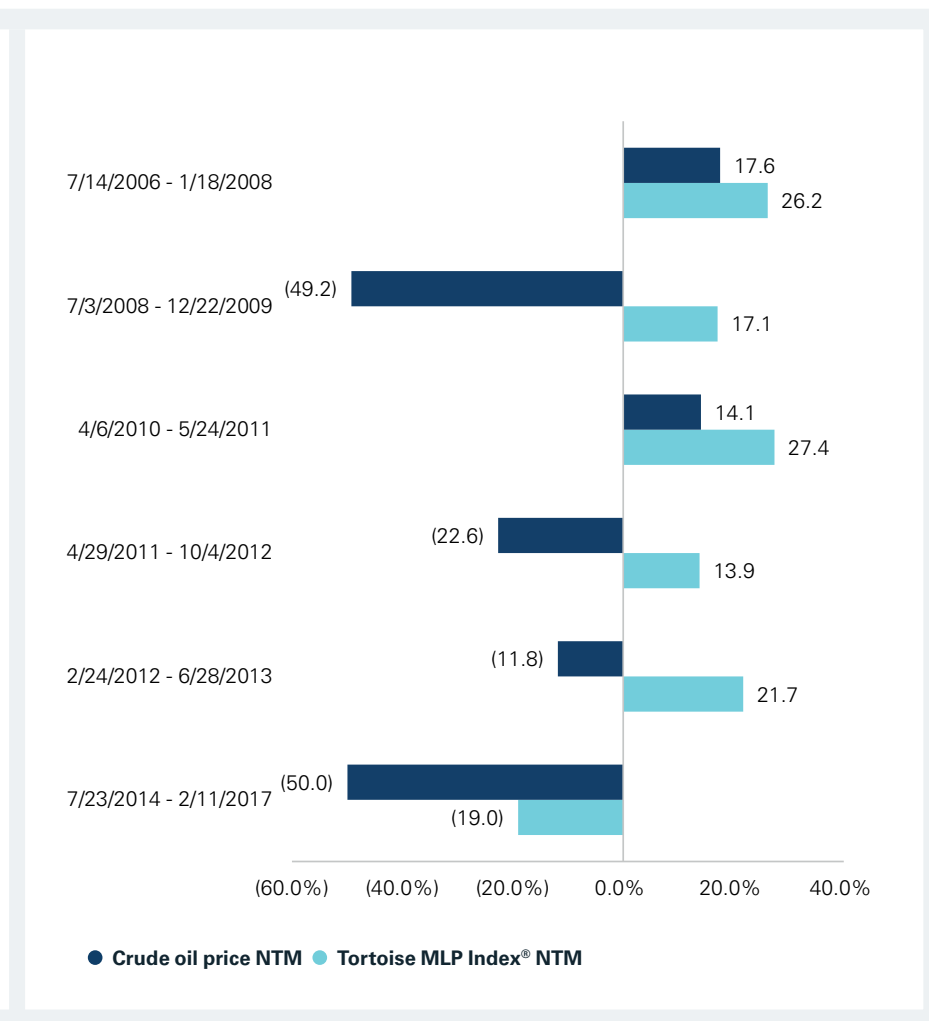
Ticker	Security	Shares held	Unit cost (\$)	Total cost (\$)	Current price (\$)	Current value (\$)	Market weight (%)
Common stock							
<i>Natural gas pipelines</i>							
TEGP	Tallgrass Energy GP, LP	49,453	22.00	1,087,966.00	26.97	1,333,747.41	0.5
<i>Gathering & processing</i>							
TRGP	Targa Resources Corp.	49,466	57.60	2,849,311.17	57.62	2,850,230.92	1.0
WMB	Williams Companies, Inc	344,524	21.40	7,372,752.42	28.84	9,936,072.16	3.5
				\$10,222,063.59		\$12,786,303.08	4.5%
Limited partnerships							
<i>Crude oil pipelines</i>							
GEL	Genesis Energy L.P.	188,866	43.76	8,263,861.12	36.27	6,850,169.82	2.4
PAA	Plains All American Pipeline, L.P.	699,541	40.94	28,640,956.43	31.39	21,958,591.99	7.7
SHLX	Shell Midstream Partners LP	205,168	32.12	6,589,752.07	32.47	6,661,804.96	2.3
SXL	Sunoco Logistics Partners L.P.	474,495	30.86	14,642,301.06	25.52	12,109,112.40	4.2
TLLP	Tesoro Logistics LP	243,050	52.55	12,772,054.75	57.88	14,067,734.00	4.9
				\$70,908,925.42		\$61,647,413.17	21.6%
<i>Natural gas pipelines</i>							
ETE	Energy Transfer Equity, L.P.	873,878	16.04	14,021,030.63	17.95	15,686,110.10	5.5
ETP	Energy Transfer Partners, L.P.	246,844	31.10	7,677,838.84	38.15	9,417,098.60	3.3
EPD	Enterprise Products Partners L.P.	840,695	28.64	24,077,461.94	28.33	23,816,889.35	8.3
EQGP	EQT GP Holdings LP	44,858	30.21	1,355,057.19	27.55	1,235,837.90	0.4
EQM	EQT Midstream Partners, LP	200,188	75.94	15,202,987.08	78.26	15,666,712.88	5.5
OKS	ONEOK Partners, L.P.	326,072	34.28	11,176,461.15	43.14	14,066,746.08	4.9
SEP	Spectra Energy Partners, LP	208,067	47.54	9,892,474.51	45.34	9,433,757.78	3.3
TEP	Tallgrass Energy Partners, LP	123,450	43.26	5,340,749.54	49.48	6,108,306.00	2.1
				\$88,744,060.88		\$95,431,458.69	33.4%
<i>Refined product pipelines</i>							
BPL	Buckeye Partners, L.P.	201,981	69.04	13,944,160.36	69.71	14,080,095.51	4.9
MMP	Magellan Midstream Partners, L.P.	315,412	63.27	19,957,057.02	80.03	25,242,422.36	8.8
PSXP	Phillips 66 Partners LP	243,803	52.50	12,800,856.90	56.17	13,694,414.51	4.8
VLP	Valero Energy Partners LP	140,738	39.65	5,580,227.61	48.17	6,779,349.46	2.4
				\$52,282,301.89		\$59,796,281.84	20.9%
<i>Gathering & processing</i>							
AM	Antero Midstream Partners LP	192,075	26.24	5,040,258.13	33.52	6,438,354.00	2.3
MPLX	MPLX LP	431,907	44.35	19,153,943.30	37.85	16,347,679.95	5.7
NBLX	Noble Midstream Partners LP	42,097	25.27	1,063,882.24	43.42	1,827,851.74	0.6
WGP	Western Gas Equity Partners, LP	35,802	43.75	1,566,421.59	44.87	1,606,435.74	0.6
WES	Western Gas Partners LP	226,161	54.96	12,430,611.52	61.38	13,881,762.18	4.9
WPZ	Williams Partners L.P.	223,158	35.40	7,900,849.20	41.04	9,158,404.32	3.2
				\$47,155,965.98		\$49,260,487.93	17.2%
Cash & equivalents							
CASH	Cash Account			3,834,475.06		3,834,475.06	1.3
DIVACC	Dividend Accrual			1,680,613.37		1,680,613.37	0.6
				\$5,515,088.43		\$5,515,088.43	1.9%
TOTAL PORTFOLIO				\$275,916,372.20		\$285,770,780.55	100.0%

MLP resilience despite crude volatility

Correlated in short-term



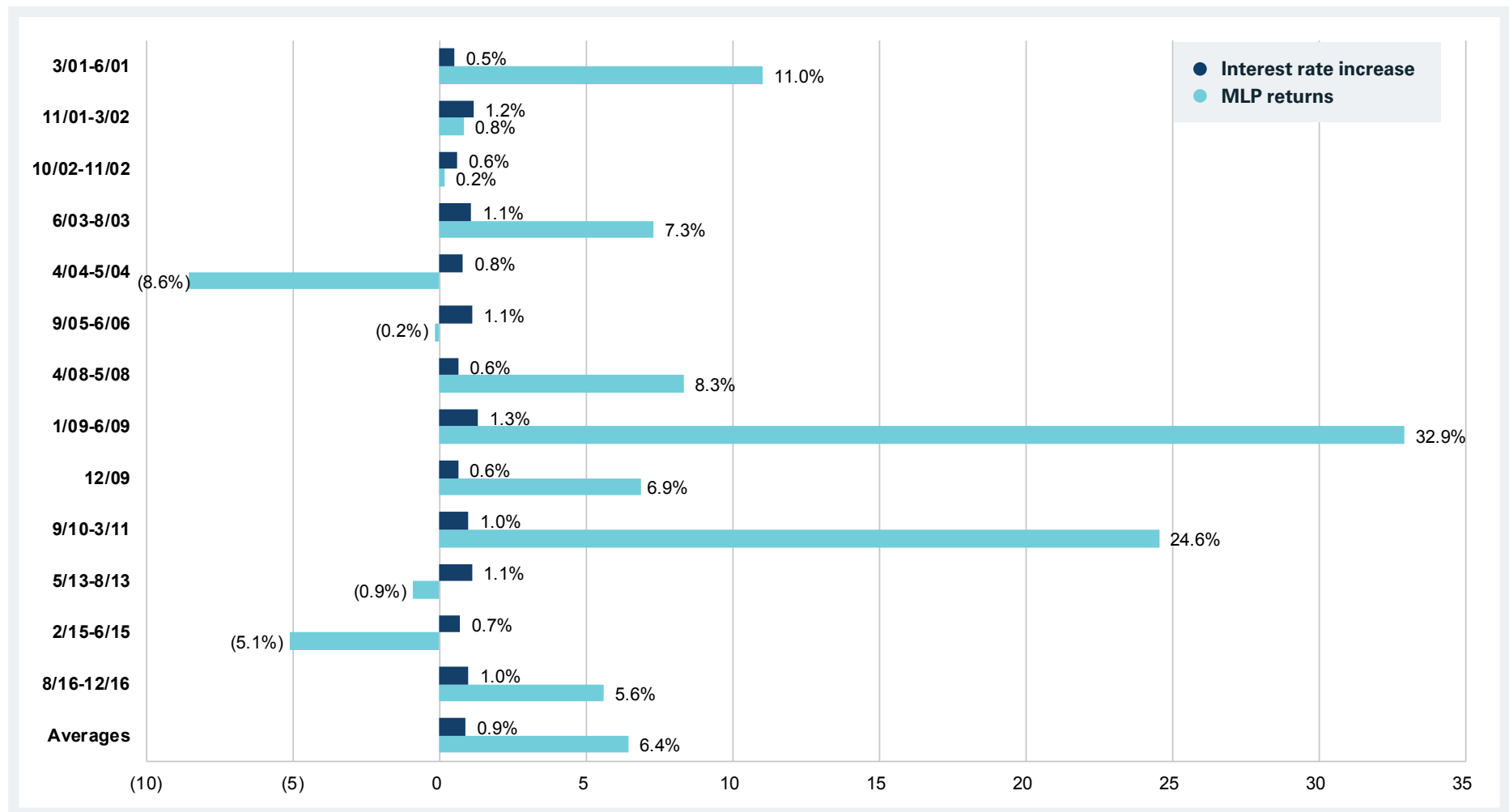
Peak - trough plus 12 months



As of 2/13/2017

NTM returns represent returns over the 12 month period from trough relative to previous peak. Crude = Bloomberg West Texas Intermediate (WTI) Cushing Crude Oil Spot Price. It is not possible to invest directly in an index. Please see important disclosures at end of presentation for index descriptions.

MLP long-term resiliency to interest rate increases



As of 12/31/2016

Periods shown are those where the U.S. 10-year government bond interest rate increased by at least 50 basis points over one or more consecutive months. Returns are period specific and are not annualized. Interest rate increase source: Bloomberg. MLP source: Tortoise MLP Index® (as of 1/1/2000). Please see important disclosures at end of presentation.

It is not possible to invest directly in an index. **Past performance is no guarantee of future results.**

Separate account key contacts

Client Service

Reporting
General questions
Billing (advisory fee)
K-1 checklist
General tax questions

Tamara Boykin

Senior Client Service Associate
913-890-2118
tboykin@tortoiseadvisors.com

Jenny Park

Director, Head of Institutional Client Service
913-890-2132
jpark@tortoiseadvisors.com

Operations

Custodial account data feed set-up
Trade settlement issues
Investment accounting and reconciliation

Raven Olivarez-Weber

Vice President and Senior Operations Analyst
913-890-2160

Kelly Schuetz

Senior Operations Specialist
913-890-2151

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Connie Savage, CPA

Senior Managing Director and
Chief Operating Officer

Important disclosures

This presentation contains certain forward-looking statements. These forward-looking statements include all statements regarding the intent, belief or current expectations regarding matters covered and all statements which are not statements of historical fact. The forward-looking statements involve known and unknown risk, uncertainties, contingencies and other factors, many of which are beyond our control. Since these factors can cause results, performance and achievements to differ materially from those discussed in the presentation, you are cautioned not to place undue reliance on the forward-looking statements. This presentation is updated through January 31, 2017 unless otherwise noted.

Index information: MLPs (unless noted) = Tortoise MLP Index®, a float-adjusted, capitalization-weighted index of energy master limited partnerships (MLPs). To be eligible for inclusion in the Tortoise MLP Index®, a company must be publicly traded, organized as a limited partnership or a limited liability company, and be classified as an “energy MLP” by the National Association of Publicly Traded Partnerships (NAPTP). Tortoise MLP Index® (the “Index”) is the exclusive property of Tortoise Index Solutions, LLC, which has contracted with S&P Opco, LLC (a subsidiary of S&P Dow Jones Indices) to calculate and maintain the Index. The Index is not sponsored by S&P Dow Jones Indices or its affiliates or its third party licensors (collectively, “S&P Dow Jones Indices”). S&P Dow Jones Indices will not be liable for any errors or omission in calculating the Index. “Calculated by S&P Dow Jones Indices” and its related stylized mark(s) are service marks of S&P Dow Jones Indices and have been licensed for use by Tortoise Index Solutions, LLC and its affiliates. S&P® is a registered trademark of Standard & Poor’s Financial Services LLC (“SPFS”), and Dow Jones® is a registered trademark of Dow Jones Trademark Holdings LLC (“Dow Jones”). The Alerian MLP Index is a composite of the 50 most prominent energy MLPs that provides investors with an unbiased, comprehensive benchmark for this emerging asset class. Wells Fargo MLP Index (formerly Wachovia MLP Index), a float-adjusted, capitalization-weighted index of energy master limited partnerships (MLPs) with a market capitalization of at least \$200 million at the time of inclusion. Equities = S&P 500® Index, an unmanaged market-value weighted index of stocks which is widely regarded as the standard for measuring large-cap U.S. stock market performance. Utilities = The S&P Utilities Select Sector Index is a modified market-cap weighted index composed of constituents of the S&P 500 in the utility sector (as defined by the Global Industry Classification Standard). REITs = FTSE NAREIT Equity Index, an unmanaged capitalization-weighted index of all U.S. equity real estate investment trust. It is not possible to invest directly in an index.

Past performance is no guarantee of future results.



Steady wins[®]

www.tortoiseadvisors.com

Advisory Research, Inc. (formerly FAMCO)

Mandate: Master Limited Partnerships

Hired: 2012

Firm Information	Investment Approach	Total ARMB Mandate
<p>Advisory Research was founded in 1974. In 2012, it acquired FAMCO, which specialized in MLPs and Energy Infrastructure. Advisory manages a broad spectrum of assets including value-oriented U.S., international, global, as well as energy infrastructure and MLPs.</p> <p>As of 12/31/2016, Advisory Research's total assets under management were \$8.0 billion.</p> <p>Key Executives: James Cunnane, Jr., <i>Chief Inv. Officer</i> Quinn Kiley, <i>Sr. Portfolio Mgr.</i> Becky Roesch, <i>Sr. VP Client Svcs</i></p>	<p>Advisory Research's investment philosophy focuses on MLP and energy infrastructure midstream assets (gathering, processing, natural gas compression, transportation, storage and distribution), particularly in the Marcellus and Permian basins. Advisory employs both top-down and bottom-up analytical approaches to guide its investment selection process. By focusing on energy infrastructure assets in high quality U.S. basins, Advisory limits exposure to commodity price volatility and has a low correlation to equity markets.</p> <p>Benchmark: Alerian MLP Index (Total Return)</p>	<p>Assets Under Management: 12/31/2016: \$244,211,812</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>	<u>6-Years Annualized</u>
Advisory Research	3.27%	22.06%	-2.37%	-	-
Alerian MLP Index (Tot Ret)	2.04%	18.31%	-5.80%	2.25%	4.10%

Advisory Research
MLP Equity Strategy

Alaska Retirement Management Board
March 2, 2017

8235 Forsyth Blvd.
Suite 700
St. Louis, MO 63105
Tel: 314 446-6750
www.advisoryresearch.com

MLP Team Overview

HISTORY

- Longest MLP track record¹
- Outperformed Alerian MLP Index by 205 bps annually, gross of fees, since 12/31/1995²
- 100% of long-term employees are invested in our strategies

INVESTMENT PROCESS

- Focus on MLP and energy infrastructure midstream assets
- Our process is highlighted by our Quality Scorecard and Thematic Overlay
- Top-down / bottom-up, security specific, 4-step investment process
- Seek superior risk-adjusted returns over full market cycles

FOCUS

- 14 person dedicated team with 16 years average industry experience
- Team's compensation entirely based on success of the MLP business
- MLP & Energy Infrastructure Team: \$4.6 billion of assets under management

¹ Based on inception dates of MLP products sourced from eVestment.

² MLP composite: 12/31/1995 to 12/31/2016. This represents the longest time period for which the Alerian MLP Index returns are available.

MLP Team Overview

Dedicated and experienced MLP & Energy Infrastructure Team (“MLP Team”)

Investments



Jim Cunnane Jr., CFA
Managing Director
Chief Investment Officer
24 years industry
20 years team



Quinn Kiley
Managing Director
Senior Portfolio Manager
16 years industry
11 years team



William Adams, CFA
Senior Vice President
Research Analyst
35 years industry
12 years team



Farah Alam
Vice President
Research Analyst
14 years industry
9 years team



Jeff Morgan, CFA
Vice President
Research Analyst
18 years industry
4 years team



Gregory Westrich
Vice President
Research Analyst
10 years industry
8 years team



Piotr Wianecki, CFA, CAIA
Vice President
Research Analyst
10 years industry
1 year team



Mark Marifian
Associate
Product Specialist
6 years industry
2 years team

Dedicated Services



Becky Roesch, CFA
Senior Vice President
Client Services
29 years industry
18 years team



Marcey Wolter
Vice President
Client Services
18 years industry
11 years team



Amanda Akin
Associate
Client Services
11 years industry
New Hire



Maggie Zastrow
Associate
Client Services
9 years industry
2 years team



Ryan Crislip
Vice President
Head Trader
17 years industry
12 years team



Joel Miller
Associate
Trading & Settlements
6 years industry
3 years team

MLP Equity Strategy

Why MLP Equity?

ATTRACTIVE STRATEGY

- Focus on energy-related midstream assets (gathering, processing, natural gas compression, transportation, storage and distribution)
- Seek attractive yield with secure and growing distributions
- Exposure to North American energy infrastructure with limited commodity price exposure

ATTRACTIVE STRATEGY ATTRIBUTES

- Provide high levels of after-tax total return and a growing cash yield
- Provide low correlation to the broader equity market over the long term
- Attractive risk / reward trade-off when added to a diversified portfolio

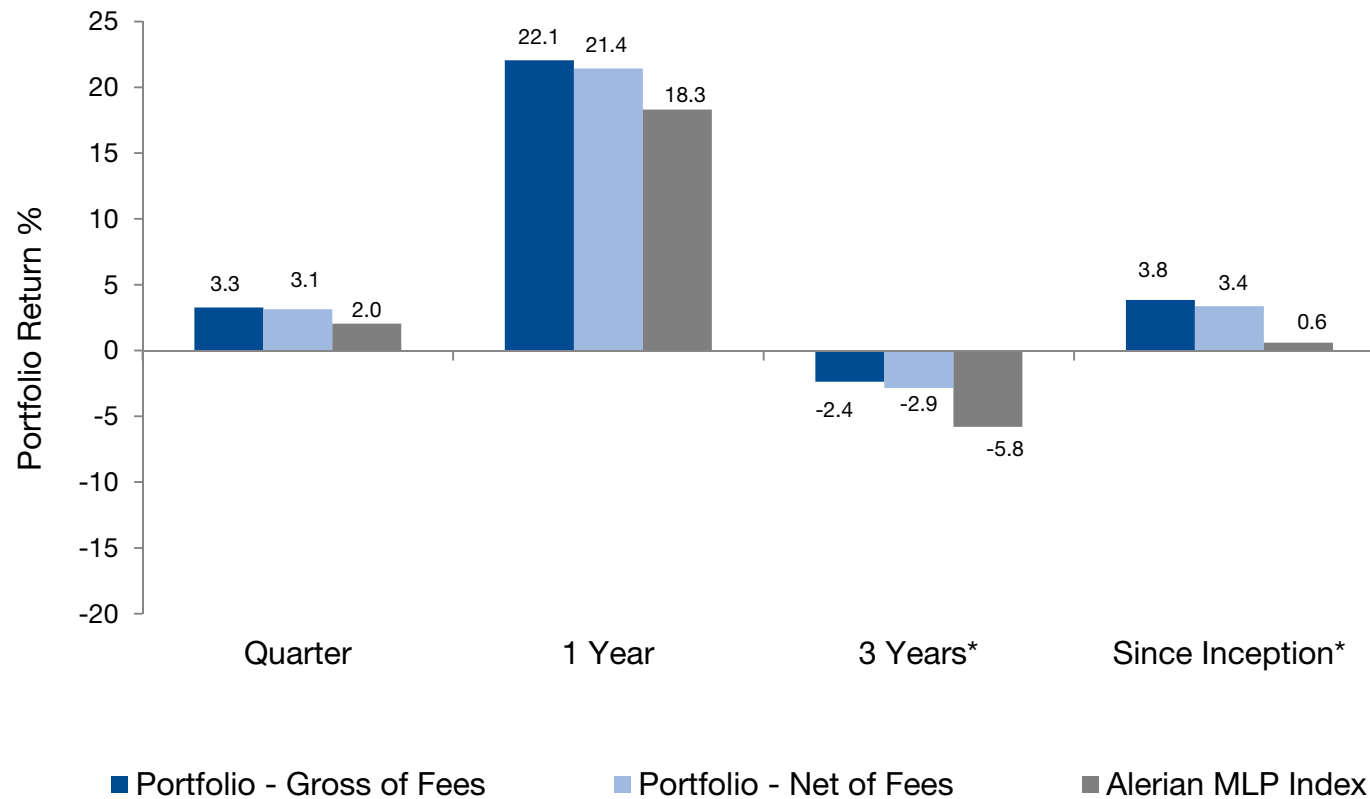
MLP Equity Strategy

Investment objectives & risk guidelines

RETURN OBJECTIVE	200-400 bps annual excess return
BENCHMARK	Alerian MLP Index
TRACKING ERROR	2% - 8%
MIDSTREAM SECTOR WEIGHTS	+/- 20%
POSITION SIZE	Max 10%
NUMBER OF HOLDINGS	20-40
CASH BALANCE	Max 10%
PERMITTED SECURITIES	Energy MLPs and Energy Infrastructure Equities

Performance Review

Performance metrics for periods ending December 31, 2016

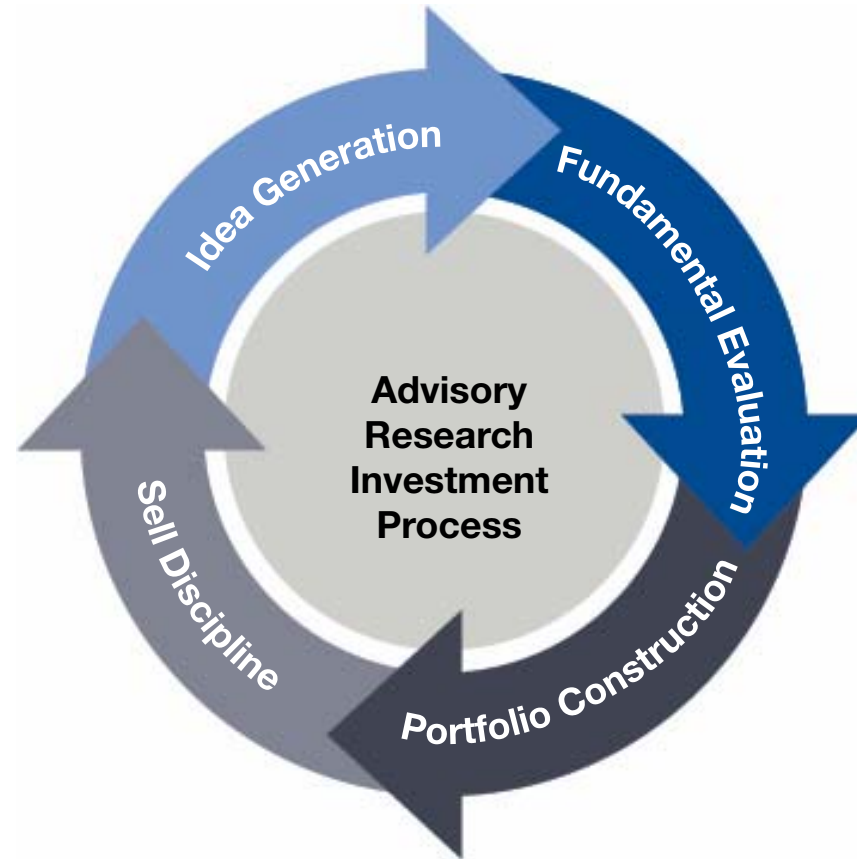


Source: Advisory Research, Inc.

*Returns greater than one year are annualized; inception date 10/31/2012

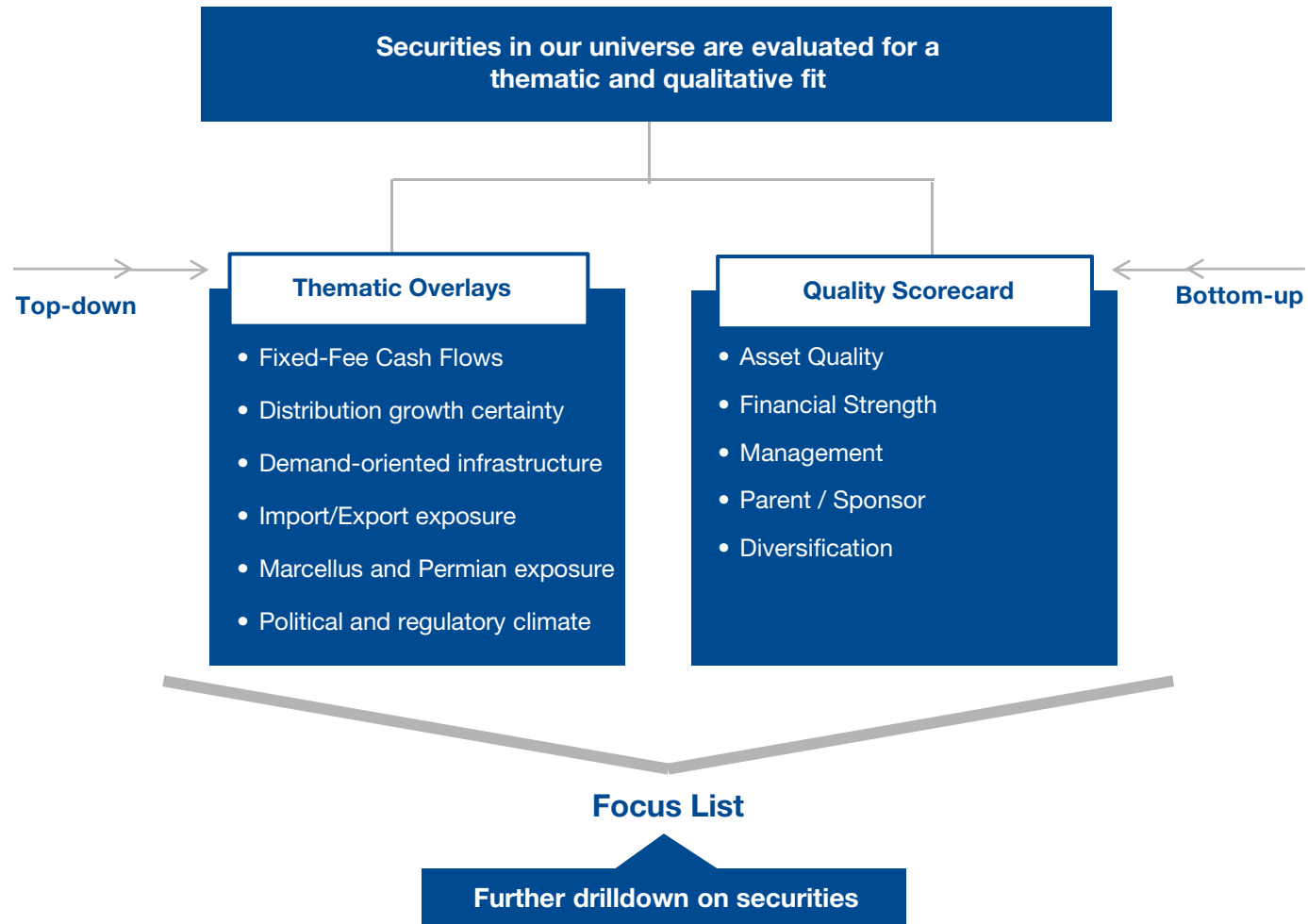
Investment Process

Straightforward, proven, repeatable process



Investment Process

Step 1: Idea generation



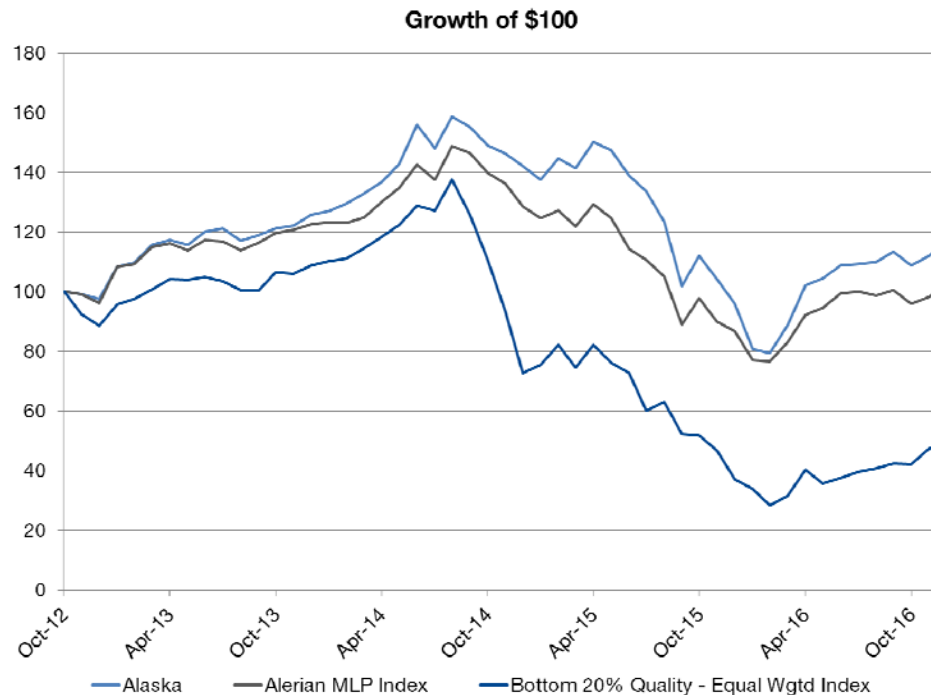
Thematic Overlays are the opinion of the investment team and are subject to change.

Investment Process

Quality Scorecard proof statement

Our Quality Scorecard adds value to our investment process by reducing exposure to distribution cuts

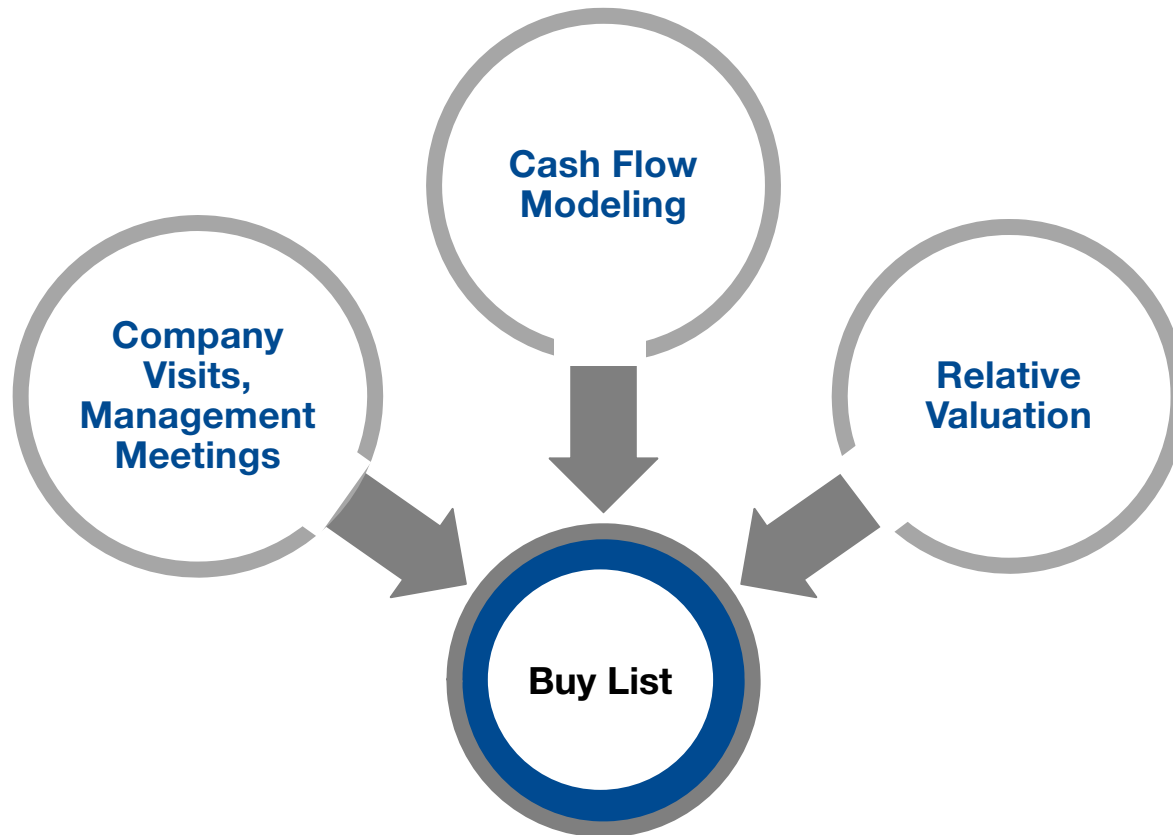
- Our process individually ranks securities by Asset Quality, Financial Strength, Management, Parent/Sponsor, and Diversification for each security in our universe and precludes purchases from securities in the bottom 20% of the universe
- 60% of distribution cuts have come from the bottom quintile of our universe and 75% of distribution cuts have come from the bottom 30% of our universe
- Since the portfolio's inception, the bottom 20% of securities have underperformed the portfolio and the Alerian MLP Index



Investment Process

Step 2: Fundamental evaluation

Focus List → **In-Depth Analysis** → **Buy List**



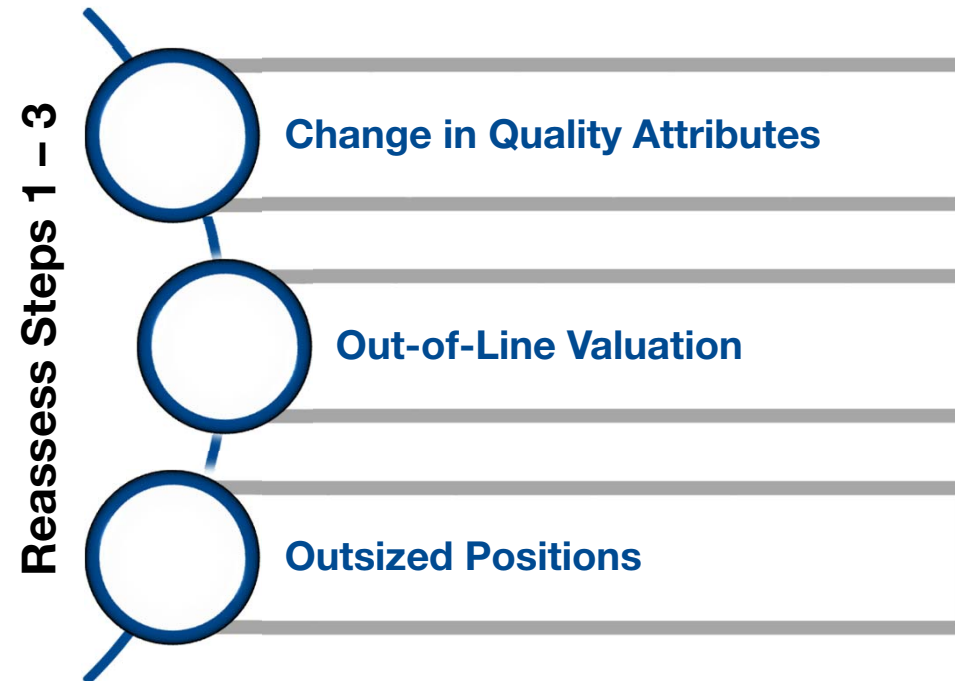
Investment Process

Step 3: Portfolio construction



Investment Process

Step 4: Sell discipline



Market Environment

Valuations still remain attractive as MLPs continue their recovery

Key Issues	Positive	Neutral	Negative	Comment
Political and Regulatory		<input checked="" type="checkbox"/>		We are cautiously optimistic that the new administration and Congress will create an environment that is more favorable towards energy infrastructure
Commodity Prices		<input checked="" type="checkbox"/>		OPEC's decision to cut production should help create a floor for oil prices
Valuations	<input checked="" type="checkbox"/>			Valuations remain attractive at the lower end of fair value for MLPs
Interest Rates			<input checked="" type="checkbox"/>	Negative perception of yield products is likely if interest rates increase, but MLP spread versus Treasuries is wide enough to be defensive
Distribution Growth		<input checked="" type="checkbox"/>		Estimates have come down to mid-single digits for MLP equities; MLP distribution cuts seem to be mostly past us
Energy Infrastructure Build-Out		<input checked="" type="checkbox"/>		U.S. energy infrastructure investment needed but spending has been rationalized; easing of regulations may be seen in new administration

Market Environment

Political and legislative issues around MLPs remain uncertain but could positively affect the asset class

Legislative Changes

Tax Code Change

- Corporate tax cut (35% to 15%)

Less Concrete Possibilities

- Tax simplification
- Individual tax rate changes

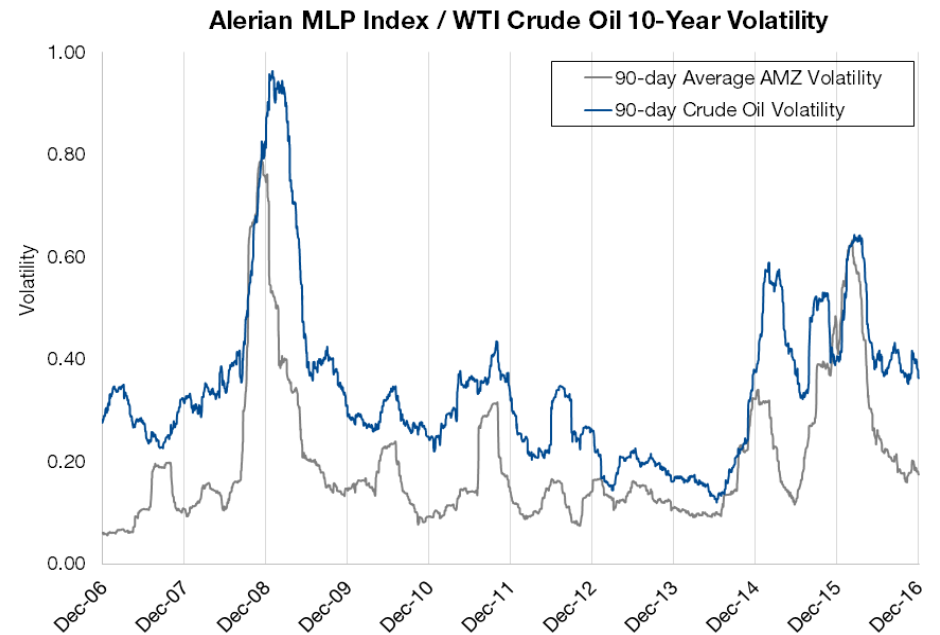
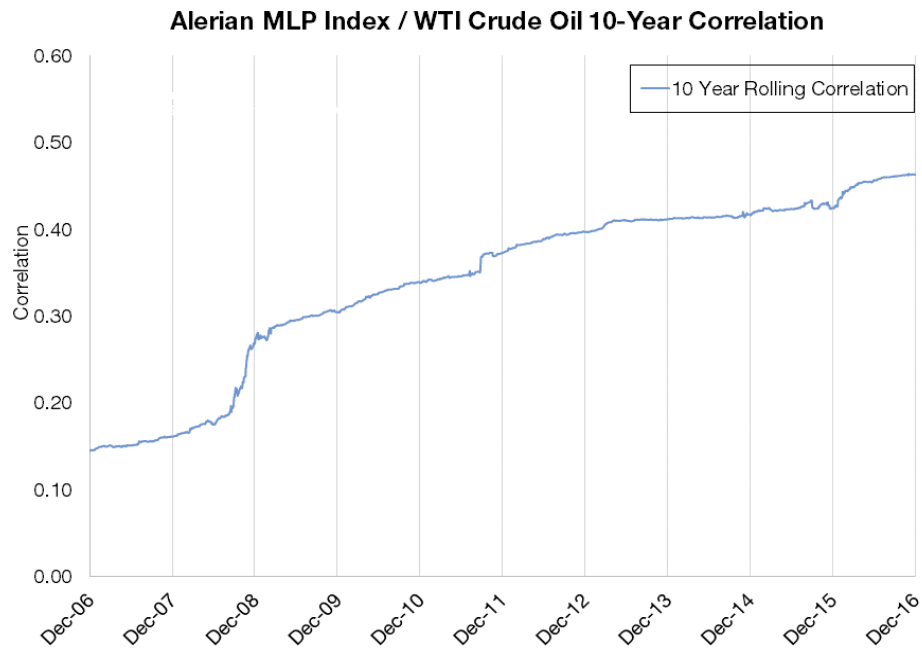
Regulatory Changes

Expectation is for a better permitting environment

- Advancement of Keystone XL Pipeline and DAPL projects
- Change in business/regulatory climate leads to energy infrastructure private investment

Market Environment

Increasing long-term correlation between MLPs and crude oil remains a concern to investors even as crude oil volatility has declined



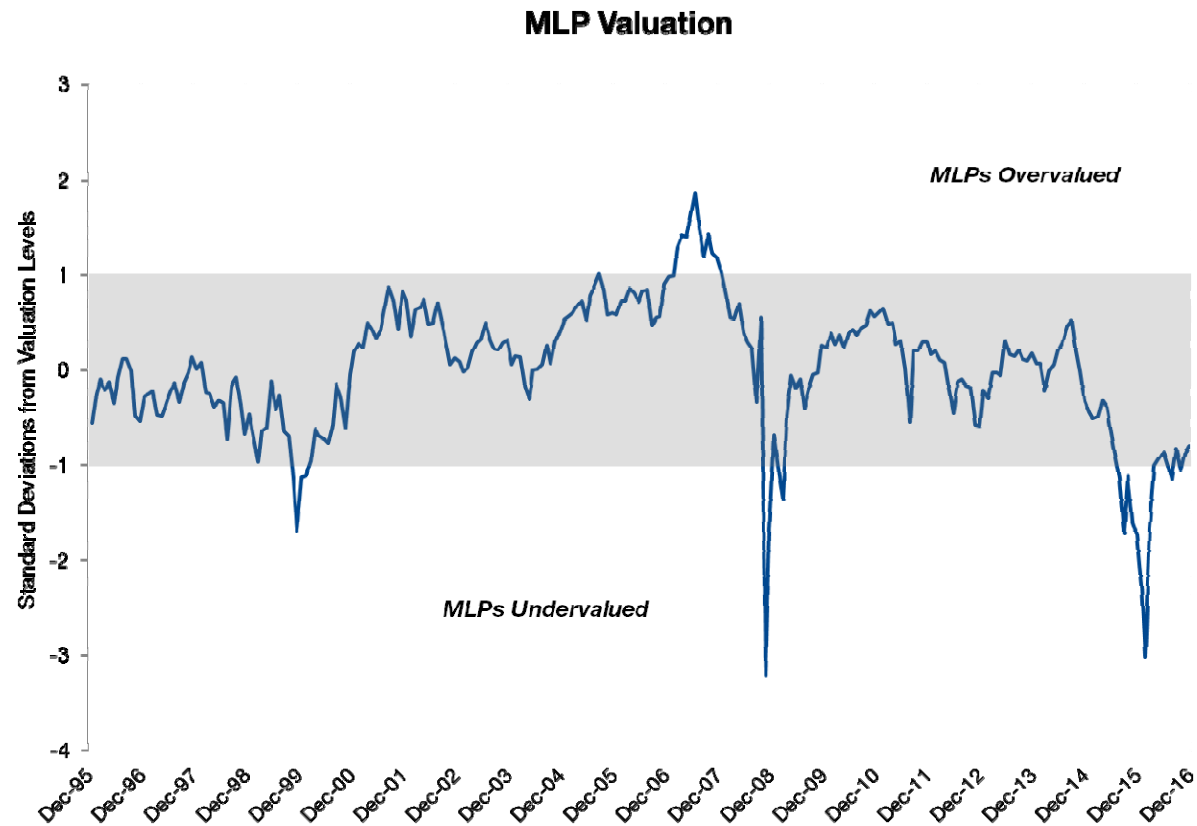
Period: 12/31/2006 to 12/31/2016.

Source: FactSet Research Systems, Advisory Research, Inc.

Market Environment

Valuations remain attractive at the lower end of fair value for MLPs

- Current valuations have historically been a great entry point for long-term investors.
- Our long-term return expectations are between 8-12%.



Period: 12/31/1995 – 12/31/2016.

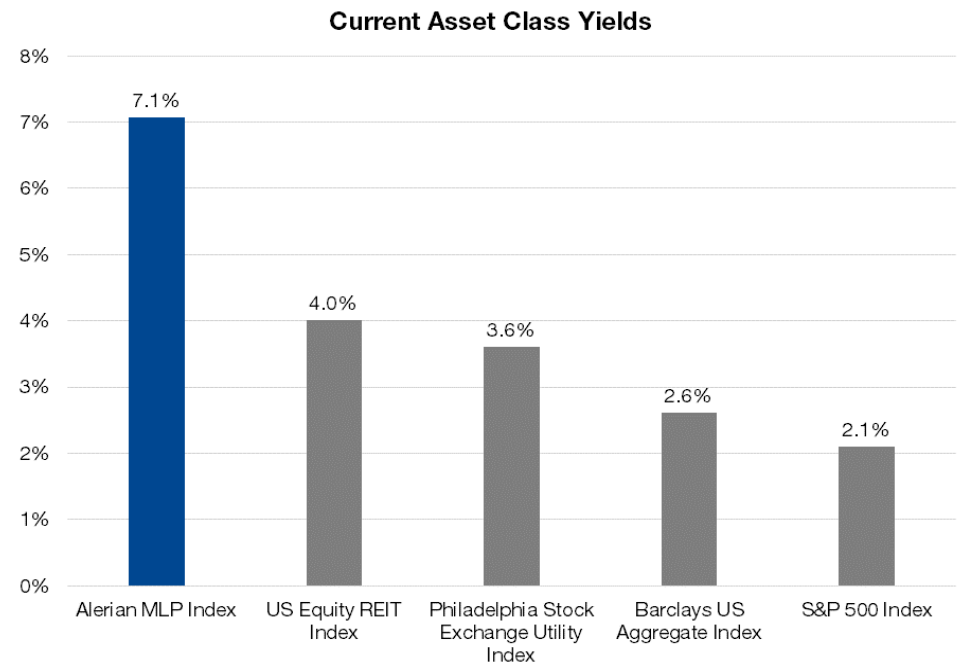
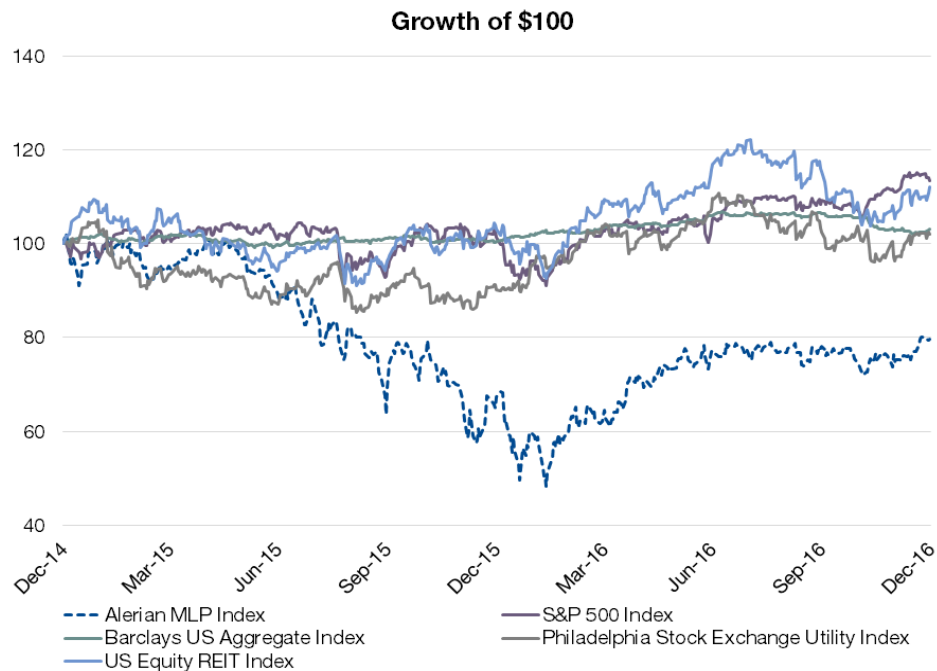
Source: FactSet Research Systems

Composite valuation based on both relative and absolute valuation metrics

Past performance is no guarantee of future results.

Market Environment

MLPs look attractive versus comparable yield-oriented asset classes



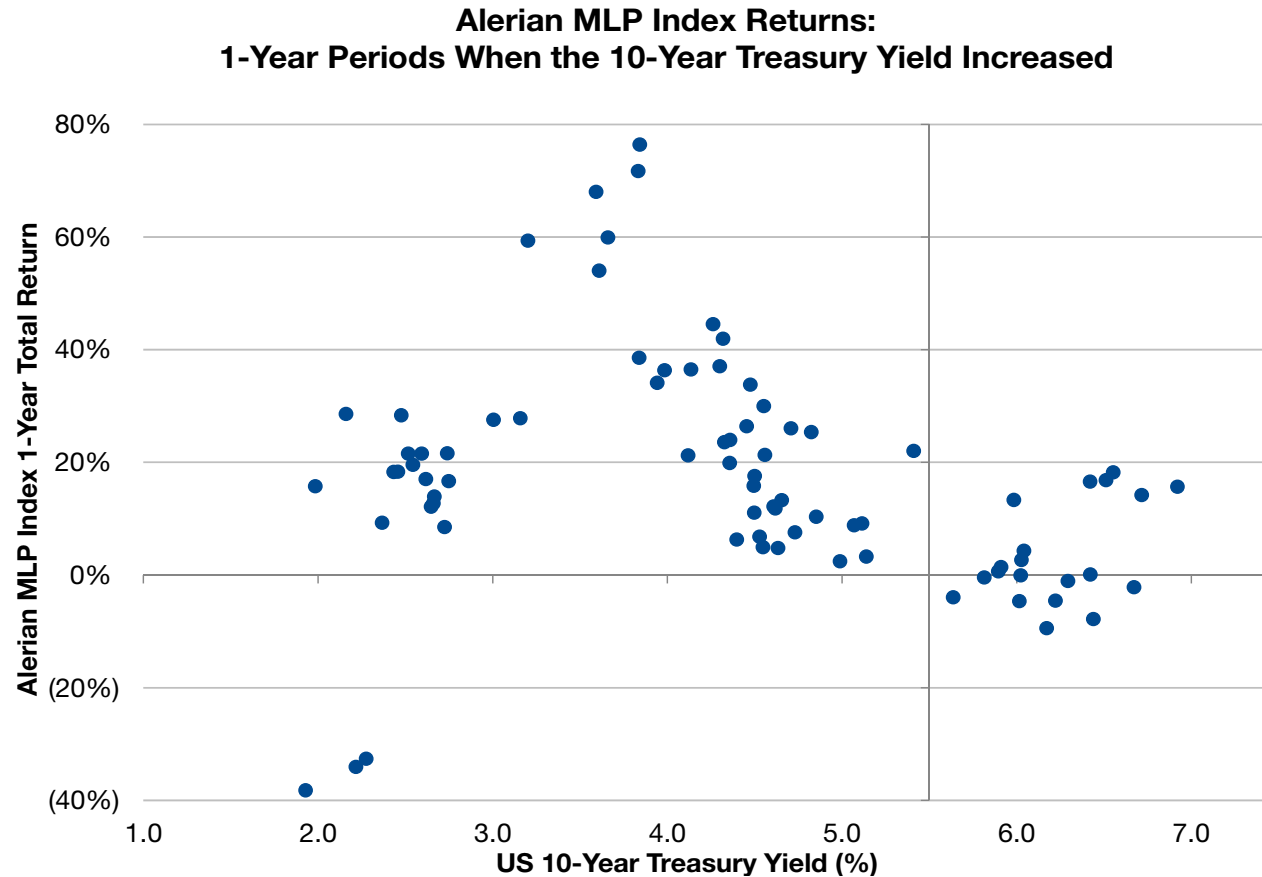
Data as of 12/31/2016

Source: Alerian Capital Management, FactSet Research Systems, Bloomberg L.P., FTSE NAREIT, S&P 500.

See Index definitions in Appendix.

Market Environment

MLPs typically perform well in a rising rate environment when rates are low



- Until interest rates increase above 5.5%, MLP performance has been historically positive over 12-month periods when the 10-year Treasury rate increased.

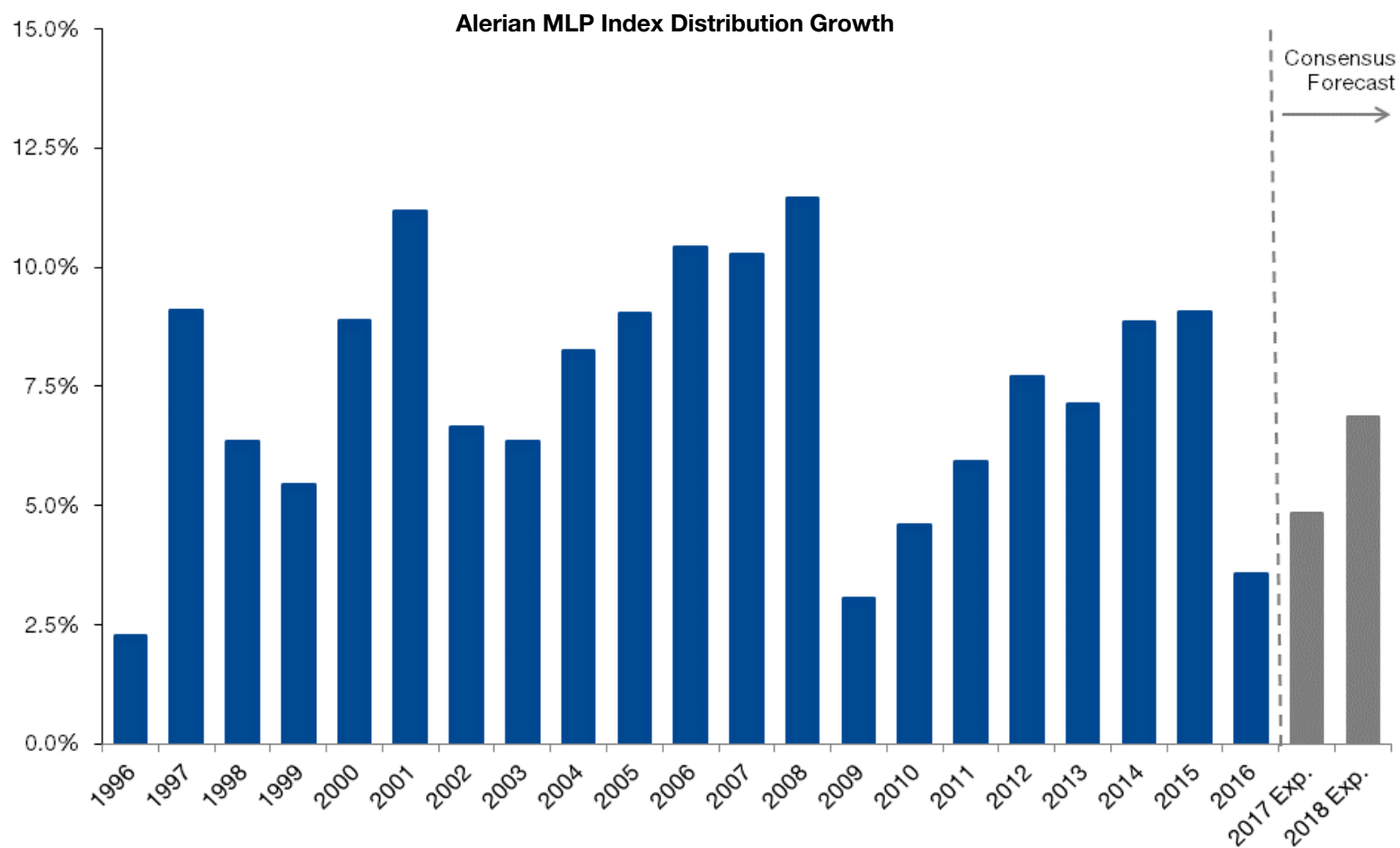
Period: 1/1/1996 to 12/31/2016.

Source: FactSet Research Systems, Alerian Website, Advisory Research, Inc.

Data is based on monthly observations.

Market Environment

Our outlook for MLP distribution growth is expected between 4% to 6%



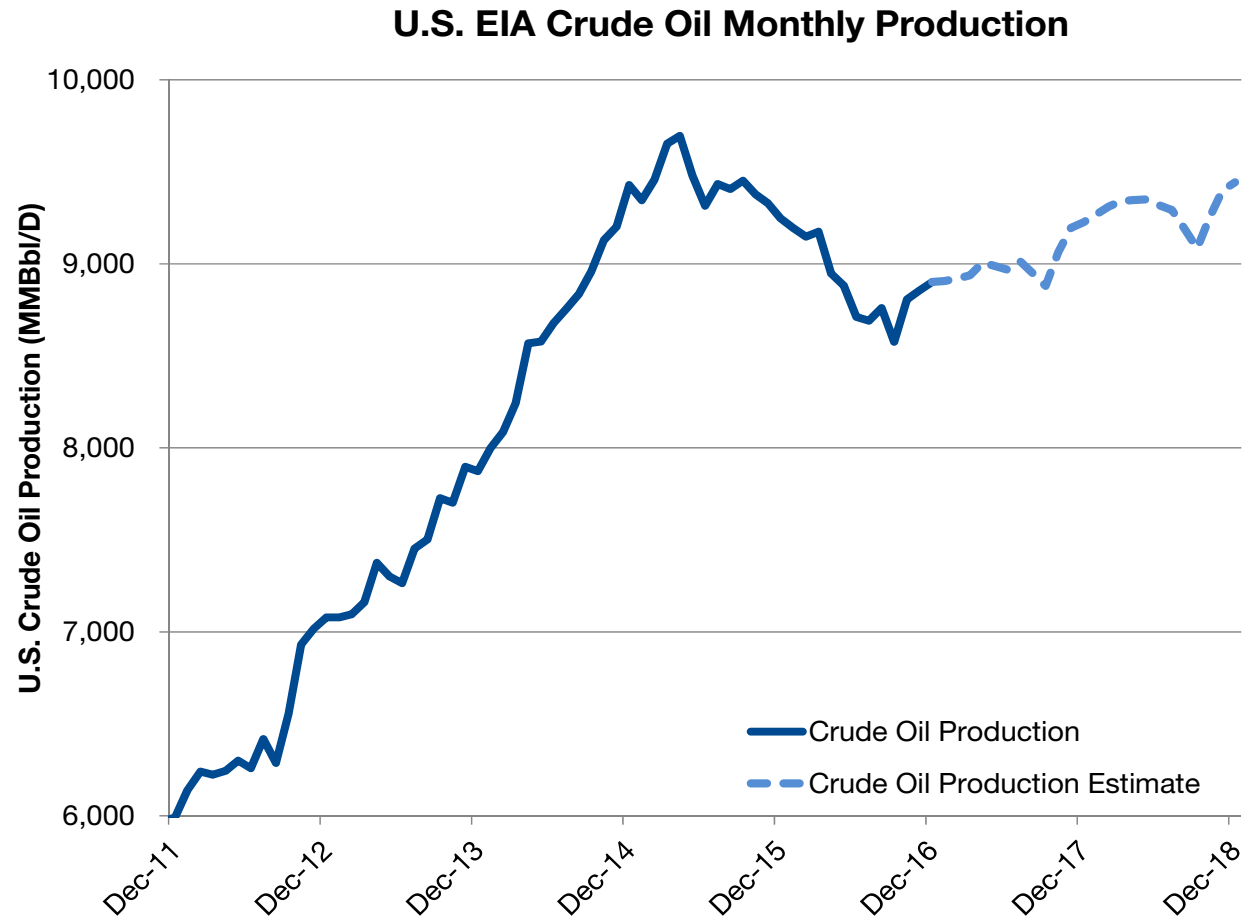
Data as of 12/31/2016

Source: Alerian MLP Index Forecast – FactSet Research Systems

Note: 2017 Exp. & 2018 Exp. growth rates for AMZ are weighted using 12/31/2016 constituent weights.

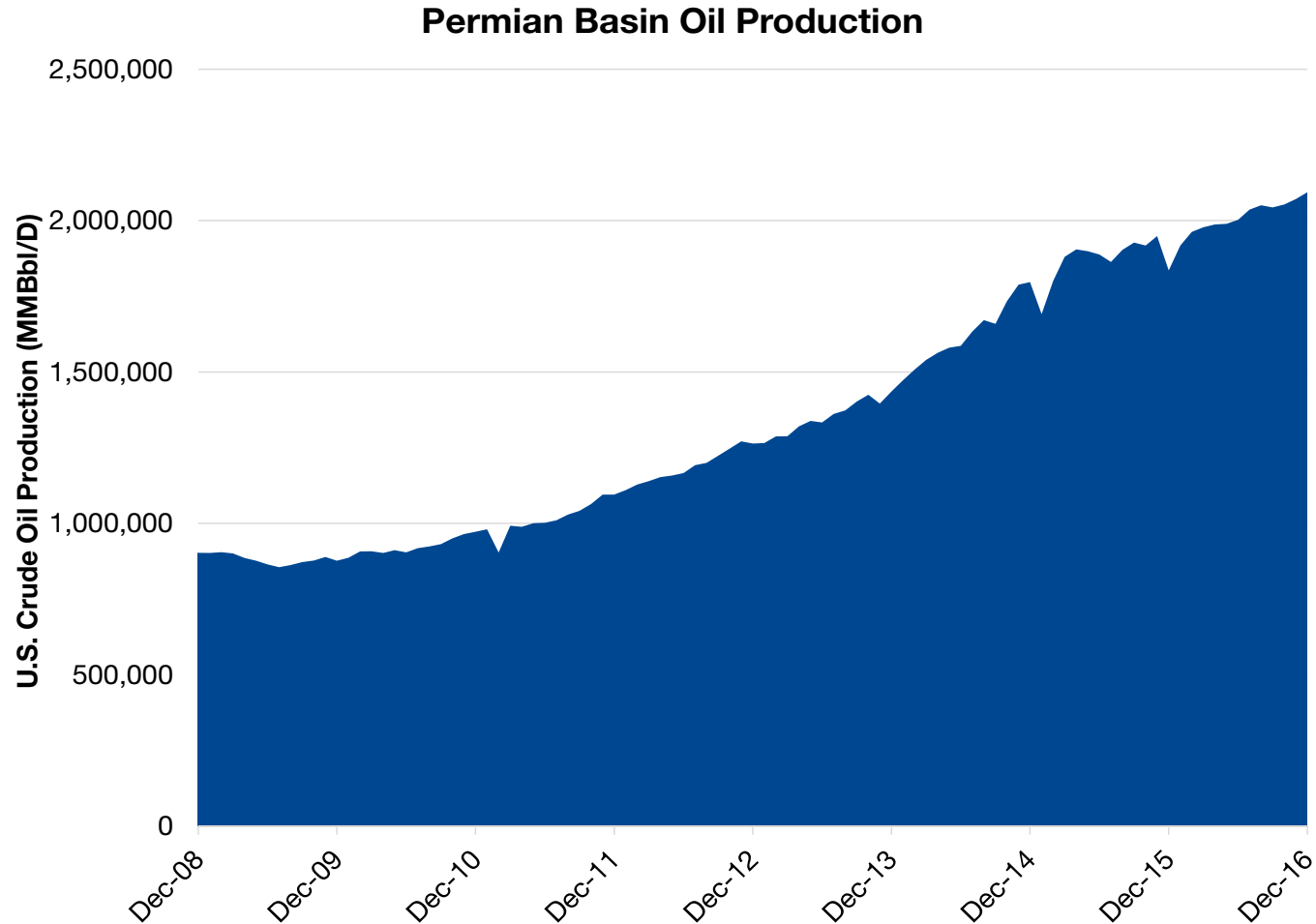
Market Environment

Production volumes have stabilized and are expected to increase



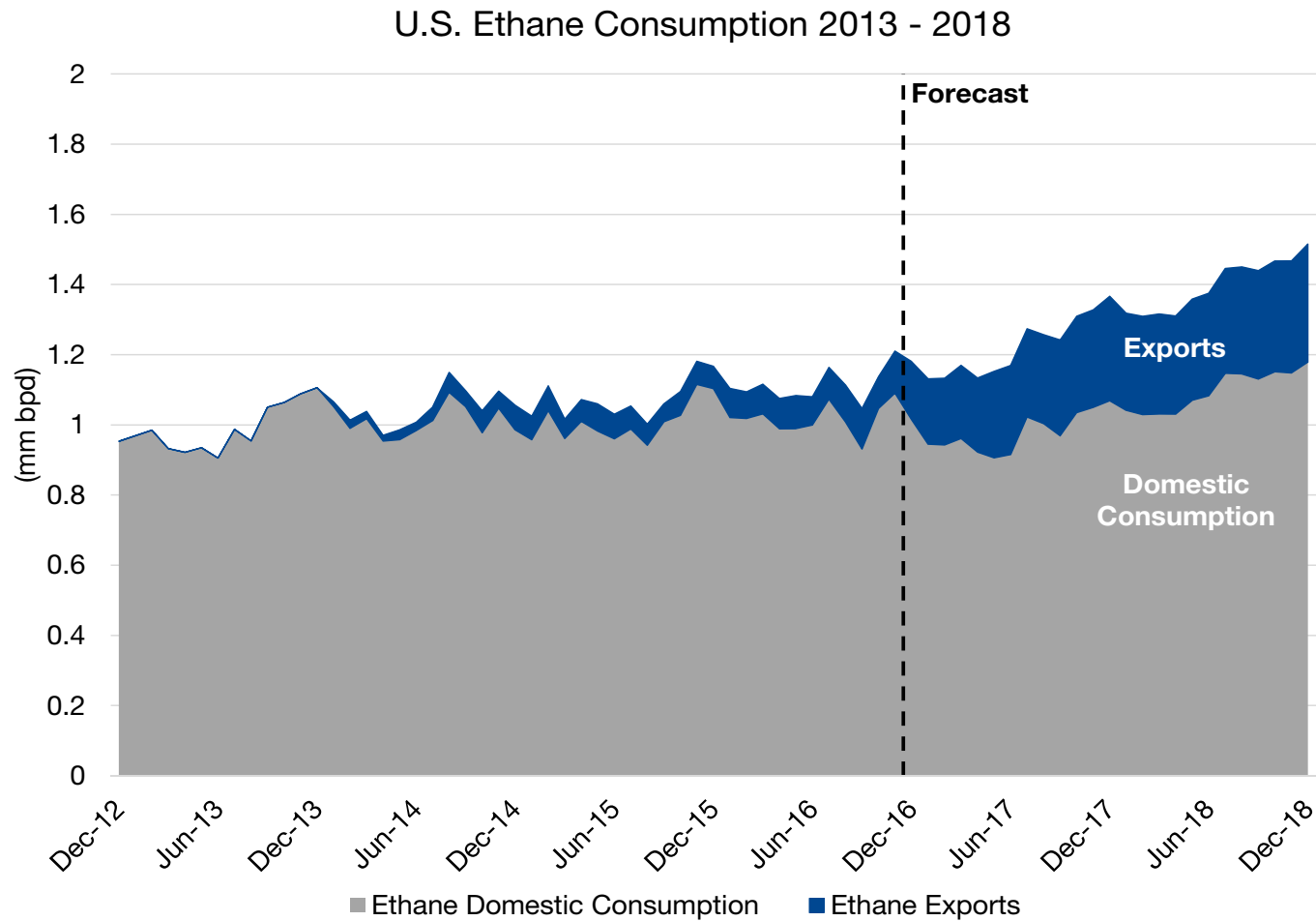
Market Environment

Permian Basin volumes should continue to grow, boosted by increased rig count, production per rig, and M&A in the region



Market Environment

Increased consumption of natural gas liquids, such as ethane, should help drive additional midstream opportunity



Data as of 12/31/2016

Source: U.S. Energy Information Administration, Short-Term Energy Outlook January 2017

Market Environment

Investment Themes

STRUCTURAL THEMES

- Prefer MLPs with improving distribution coverage and reasonable growth expectations
- Focus on demand-oriented infrastructure
- Bias towards midstream names with volumes tied to higher quality basins (i.e. Marcellus and Permian)

TACTICAL THEMES

- Increasing risk by notching down the quality scorecard
- Diversification across the energy value chain and commodities
- Preference towards NGL-exposed infrastructure
 - Increased future ethane demand expected
- Select small-caps undervalued
- Focus on income as a larger part of return stream moving forward

Portfolio Review

ARMB Investment Guidelines and Restrictions

Objective

To achieve returns, over time, in excess of the Alerian MLP Index, net of fees.

Permitted Investments

MLP interests which are U.S. dollar denominated and include: (a) securities such as units and other securities issued by MLPs that are organized as partnerships or limited liability companies which elect to be taxed as a partnership; (b) securities that offer economic exposure to MLPs from entities holding primarily general partner or managing member interests in MLPs; and (c) equity securities issued by MLP affiliates, such as MLP I-Shares. It is anticipated that a substantial portion of the MLPs will be engaged primarily in energy midstream securities.

Permitted Investments

- IPOs for securities noted above are permitted.

Restrictions

- Maximum cash allocation of 5%.

Portfolio Review

Portfolio Characteristics and Sector Weights as of December 31, 2016

Characteristics	Portfolio	Alerian MLP Index
Weighted Average Market Cap	\$10.6 Billion	\$20.2 Billion
Distribution Yield	7.4%	7.1%
2017 Estimated Distribution Growth Rate	2.8%	4.8%

MLP Sector	Portfolio %	Alerian MLP Index %	Active Weight ¹ %
Diversified Infrastructure	29.3	37.0	-7.7
Gathering & Processing	19.0	7.7	11.3
Midstream Natural Gas	14.8	13.5	1.3
Midstream Oil	32.7	30.9	1.8
Natural Gas Pipelines & Storage	1.8	4.8	-3.0
Total Midstream	97.6	93.9	3.7
Coal	0.0	0.5	-0.5
Marine Transportation	2.0	1.2	0.8
Other	0.0	1.8	-1.8
Propane	0.0	2.6	-2.6
Upstream	0.0	0.0	0.0
Total Non-Midstream	2.0	6.1	-4.1
Cash & Equivalents	0.4	0.0	0.4

Source: FactSet Research Systems

¹Active weight equals portfolio weight minus Alerian MLP Index weight.

Biographies

MLP & Energy Infrastructure Investments

James J. Cunnane, Jr., CFA, with 24 years of investment experience, is Managing Director and Chief Investment Officer of the Advisory Research MLP & Energy Infrastructure team. He oversees the firm's MLP and energy infrastructure product lines and chairs the Risk Management Committee. He joined the MLP team in 1996 and currently serves as a portfolio manager for three closed-end mutual funds: the Fiduciary/Claymore MLP Opportunity Fund, the Nuveen Energy MLP Total Return Fund and the Nuveen All Cap Energy MLP Opportunities Fund. He also serves as a portfolio manager for three open-end mutual funds: the Advisory Research MLP & Energy Income Fund, the Advisory Research MLP & Energy Infrastructure Fund and the most recently launched, Advisory Research MLP & Equity Fund. Mr. Cunnane holds a B.S. in finance from Indiana University and is a Chartered Financial Analyst (CFA) charterholder. He serves on the finance council and investment committee of the Archdiocese of St. Louis, the investment committee of Mercy Health, and on the Board of Directors of St. Patrick's Center.

Quinn T. Kiley, with 16 years of investment experience, is Managing Director and Senior Portfolio Manager of the Advisory Research MLP & Energy Infrastructure team and his responsibilities include portfolio management of various energy infrastructure assets and oversight of the energy infrastructure research process. He joined the MLP team in 2005. Mr. Kiley serves as a portfolio manager for three closed-end mutual funds: the Fiduciary/Claymore MLP Opportunity Fund, the Nuveen Energy MLP Total Return Fund and the Nuveen All Cap Energy MLP Opportunities Fund. He also serves as a portfolio manager for three open-end mutual funds: the Advisory Research MLP & Energy Income Fund, the Advisory Research MLP & Energy Infrastructure Fund and the most recently launched, Advisory Research MLP & Equity Fund. Prior to joining the MLP team, Mr. Kiley served as Vice President of Corporate & Investment Banking at Banc of America Securities in New York. He was responsible for executing strategic advisory and financing transactions for clients in the Energy & Power sectors. Mr. Kiley holds a B.S. with honors in geology from Washington & Lee University, a M.S. in geology from the University of Montana, a Juris Doctorate from Indiana University School of Law, and an M.B.A. from the Kelley School of Business at Indiana University. Mr. Kiley has been admitted to the New York State Bar. He serves on the finance committees of Rossman School and The Magic House.

William N. Adams, CFA, with 35 years of investment experience, is responsible for performing quantitative and qualitative research and analysis for MLP and energy infrastructure portfolios. Prior to joining the Advisory Research MLP & Energy Infrastructure team in 2004, Mr. Adams was a vice president in the Research Department at Banc of America Capital Management, specializing in the integrated oils, oil field services, oil and natural gas exploration, and refining and marketing industries. His previous coverage includes utilities, leisure, transportation, paper and forest products, and building industries. Mr. Adams holds a B.S.B.A. and an M.B.A. with a focus in finance from Washington University in St. Louis. Mr. Adams is a Chartered Financial Analyst (CFA) charterholder and member of the St. Louis Society of Financial Analysts.

Farah Alam, with 14 years of investment experience, is responsible for performing quantitative and qualitative research and analysis for the MLP and energy infrastructure portfolios. Prior to joining the Advisory Research MLP & Energy Infrastructure team in 2007, Ms. Alam was employed as an Associate with Chescor Capital FZ LLC – an international investment banking firm – in Dubai, UAE where she audited and developed financial models and conducted valuation for equity and debt raising projects in the infrastructure and IT industries in the Middle East. She also previously worked for three years as Manager – Research & Accounts with Chescor Capital Consultancy Services in Delhi, India with responsibilities in performing financial research, writing analytical reports and analyzing industry trends in diverse sectors such as Oil and Gas, Insurance, Offsets. Ms. Alam holds an M.B.A. with a concentration in finance from the Olin School of Business at Washington University in St. Louis, and a B.S. in chemistry and M.S. in chemistry from J.M.I. University.

Jeffrey F. Morgan, CFA, with 18 years of investment experience, is responsible for performing quantitative and qualitative research and analysis for the MLP and energy infrastructure portfolios. He joined the Advisory Research MLP & Energy Infrastructure team in September of 2012. Prior to joining the team, Mr. Morgan served as a research analyst in the equity research department at Wells Fargo Securities (previously A.G. Edwards & Sons, Inc. and Wachovia Capital Markets, LLC) covering MLPs. From April 1998 until December 2003, Mr. Morgan worked as a research analyst following the Oilfield Services sector at A.G. Edwards & Sons, Inc. Mr. Morgan holds a B.S.B.A. with concentrations in finance and banking from the University of Missouri-Columbia and is a Chartered Financial Analyst (CFA) charterholder.

Gregory P. Westrich, with 10 years of investment experience, is responsible for performing quantitative and qualitative research and analysis for the MLP and energy infrastructure portfolios. He joined the Advisory Research MLP & Energy Infrastructure team in September of 2008. Mr. Westrich served as an investment banking analyst in the Energy & Power group at A.G. Edwards & Sons, Inc. and Wachovia Capital Markets, LLC, focusing on equity capital markets transactions for master limited partnerships and exploration & production companies. Mr. Westrich holds a B.S.B.A. with concentrations in economics, finance and real estate from the Robert J. Trulaske, Sr. College of Business at the University of Missouri.

Piotr A. Wiancki, CFA, CAIA, with 10 years of investment experience, is responsible for performing quantitative and qualitative research and analysis for the MLP and energy infrastructure portfolios. Prior to joining the Advisory Research MLP & Energy Infrastructure team this year, Mr. Wiancki served as a Senior Associate for Mercer Investment Consulting, where he was responsible for investment strategy research and developing the firm's capital market assumptions. He also previously worked as an investment banking analyst at Gleacher Partners, where he analyzed mergers, acquisitions, leveraged buyouts, and financing alternatives for clients in a variety of sectors. Mr. Wiancki holds a B.S. with distinction in materials science and engineering from Stanford University and is a Chartered Financial Analyst (CFA) charterholder and a Chartered Alternative Investment Analyst (CAIA) charter holder.

Mark E. Marifian, with 6 years of investment experience, serves as an extension of the portfolio management team, focusing on the marketing of the firm's MLP products. Prior to joining the Advisory Research MLP & Energy Infrastructure team this year, Mr. Marifian served as a Senior Investment Consulting Analyst for Mercer Investment Consulting, where he worked with endowment, foundation and healthcare clients. Mr. Marifian holds a B.A. in Economics and a B.S.B.A. in Finance from Truman State University and is currently an M.B.A. candidate at the Olin School of Business at Washington University in St. Louis.

Biographies

MLP & Energy Infrastructure Team

Becky J. Roesch, CFA, has worked with the MLP Team since 1999 and oversees the client services efforts and administration for the MLP and energy infrastructure portfolios. She is a member of the MLP team's Compliance Risk Committee. She has 29 years experience in investment client services, trust investments and administration as well as experience in the securities industry. Previously, Ms. Roesch was Director of Trust Investments for the retirement and savings plan assets at Ralston Purina Company. She has extensive experience in trust operations at both Ralston Purina Company and General Dynamics Corporation, the latter for which she was employed for eleven years. Ms. Roesch holds a B.S.B.A. and an M.B.A. in finance from the University of Missouri-St. Louis. Ms. Roesch is a Chartered Financial Analyst (CFA) charterholder and a member of the St. Louis Society of Financial Analysts.

Marcey J. Wolter is responsible for client servicing of institutional and separately managed account relationships. She has worked with the MLP team since 2005, when she started in a portfolio administration role. She is a member of the MLP team's Compliance Risk Committee. Prior to joining the MLP team, Ms. Wolter was a client service representative for an insurance company as well as a trust operations administrator for a start-up trust department. Ms. Wolter holds a B.A. in mathematics and economics from Denison University and an M.B.A. from the University of Northern Iowa.

Schroders Investment Management

Mandate: International Small Cap

Hired: 2010

Firm Information	Investment Approach	Total ARMB Mandate
<p>Schroders Investment Management North America Inc. is an indirect wholly-owned subsidiary of Schroders plc (“Schroders”), a public company and one of the largest asset managers listed on the London Stock Exchange. The firm is based in New York and acts as the SEC-registered investment advisor for Schroders in North America.</p> <p>As of 09/30/2016, the firm’s total assets under management were \$487 billion.</p> <p>Key Executives:</p> <p>Matthew Dobbs, <i>Head of Global Small Cap</i></p> <p>Jamie MacMillan, <i>U.S. Institutional Business Development Director</i></p>	<p>Schroders believes that investing in smaller companies with superior characteristics and that are undervalued in the market will deliver superior investment returns. Schroders seeks to identify quality growth companies by devoting in-house resources to identify the fundamental attractions of each company’s business model, gauging the scope and visibility of growth, the risks to that growth, and the quality and focus of its management. In appraising valuations, Schroders aims to look further out than the market (assessing investments based on a two-to-three-year time frame) and apply a disciplined fair-value methodology.</p> <p>Benchmark: MSCI EAFE Small Cap Index</p>	<p>Assets Under Management: 12/31/2016: \$157 Million</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>
Schroders	-3.55%	-0.94%	2.43%	10.64%
MSCI EAFE Small Cap Index	-2.86%	2.18%	2.10%	10.56%

International small companies

Presenting to:
The State of Alaska – Alaska Retirement Management Board

March 2017

Richard Sennitt | Small Cap Specialist
Jamie Macmillan | Institutional Director



Schroders

Investment Philosophy and Team



Schroders

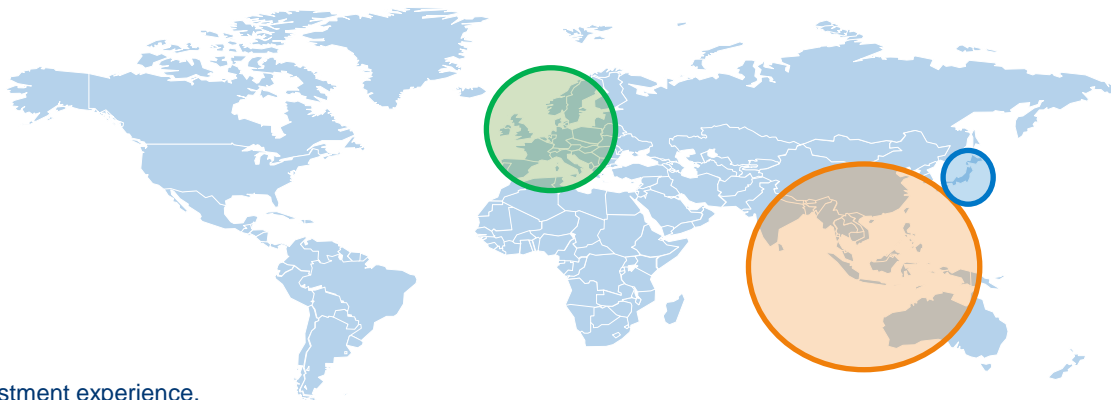
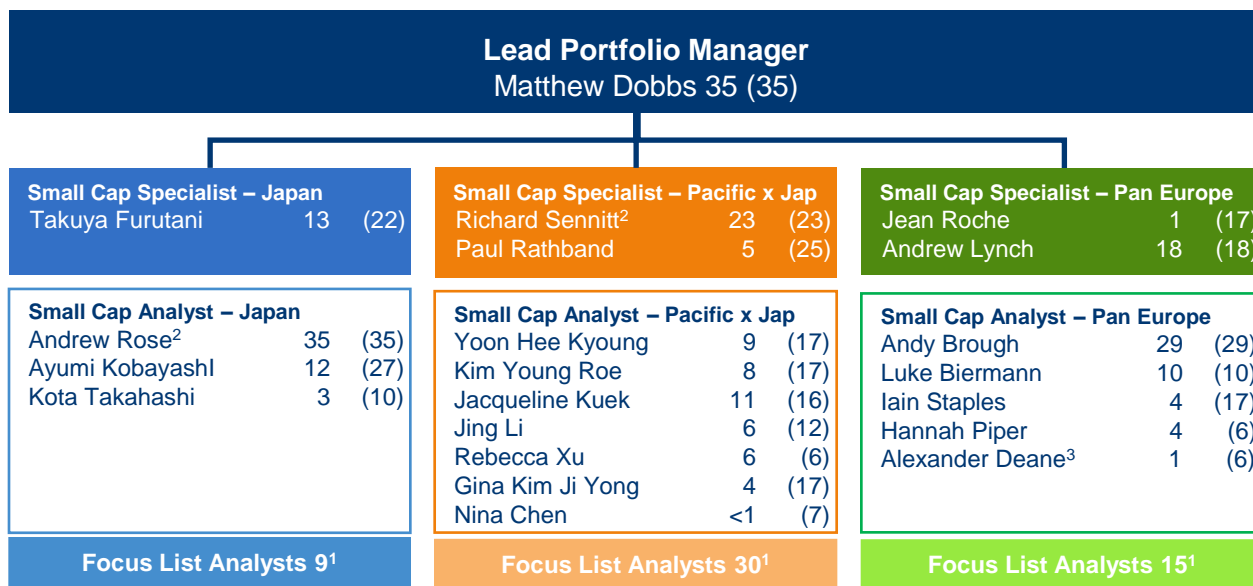
Investment philosophy

- Stock selection primary source of value added
- Growth and Quality, but at a reasonable price
- Long-term time horizon
- Strong risk framework
- A fully resourced and focused team

Resources

International small cap team – A fully resourced and focused team

- 21 specialists in international small company research and investment
- Core team of Lead Portfolio Manager and Regional Specialists have an average of 23 years investment experience and an average of 16 years tenure at Schroders
- Local presence and knowledge the key - primary research conducted out of Schroder research offices globally
- Team can draw on the broader Schroder focus list analysts – approximately 20% of holdings covered by focus list analysts
- Cross fertilization of investment ideas between regions and with Global Sector Experts



= Number of years with Schroders. (#) = Numbers of years investment experience.

Source: Schroders as of December 31, 2016. ¹June 30, 2016. ²Located in London. ³Includes other coverage

Performance



Schroders

Performance

Investment environment – 2016

- Equities market made modest progress in 2016 with the MSCI EAFE Index rising +1.0%. Smaller companies bettered their large cap peers with the MSCI EAFE Small Cap Index returning +2.2%.
- Smaller companies outperformed in continental Europe and Japan. In the latter, the more domestic focus of smaller companies has benefited them relative to large cap during a period of strength in the Japanese yen. Meanwhile they trailed in the United Kingdom and Pacific ex Japan. In the United Kingdom, the vote to leave the European Union on 23rd June hit more domestically focused smaller companies particularly hard.
- By sector, small caps notably outperformed in health care and consumer staples. There was some offset from relative underperformance in energy and real estate.
- In Q4, there has been a decided shift towards value versus growth.

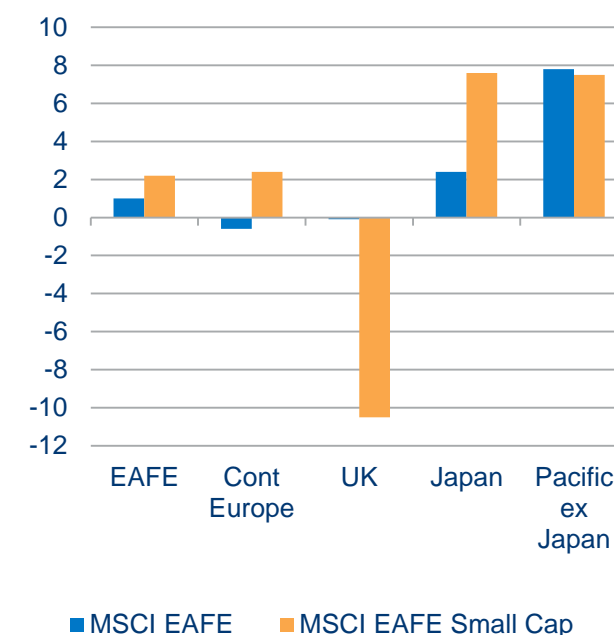
S&P EPAC SmallCap Index vs. MSCI EAFE Index¹

June 1989 = 100



MSCI EAFE and MSCI EAFE Small Cap Index Performance in US\$(%)²

12 months to 31 December 2016



¹Source: Schroders, S&P, MSCI, 31 December 2016

²Source: Schroders, MSCI

Performance shown is past performance. Past performance is not necessarily a guide to future performance. The value of investment can go down as well as up and is not guaranteed

Performance

State of Alaska International Smaller Companies

Benchmark:	MSCI EAFE SmallCap Index
Value:	US\$ 156,818,751 as at 31 December 2016
Inception date:	September 30, 2010

Performance to 31 December 2016 (in US\$%)

	3 months	6 months	1 year	3 years*	5 years*	Since Inception*
State of Alaska International Smaller Companies	-3.5	+6.5	-0.9	+2.4	+10.6	+7.6
MSCI EAFE Small Cap Index	-2.9	+5.5	+2.2	+2.1	+10.6	+7.3
Relative to MSCI EAFE Small Cap Index	-0.6	+1.0	-3.1	+0.3	0.0	+0.3

Performance Attribution against MSCI EAFE Small Cap Index

Contribution from	3 months	6 months	1 year	3 years*	5 years*
Stock Selection	-0.2	+1.5	-3.4	+0.3	+0.2
Region Allocation	+0.5	-0.5	+0.3	+0.2	0.0
Residual	+0.1	0.0	0.0	-0.2	-0.2
Difference Relative to MSCI EAFE Small Cap Index	-0.6	+1.0	-3.1	+0.3	0.0

*Annualized

Source: Schroders, MSCI, Factset PA2. Gross of fees.

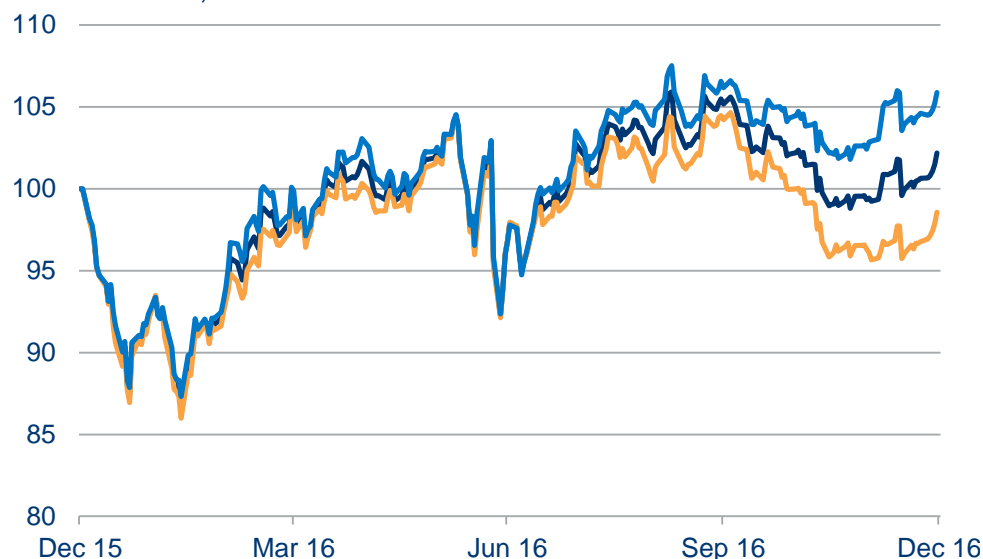
Past performance is not an indication of future performance. Please see full disclosures at the end of the presentation

Performance

Value versus growth – 2016

MSCI EAFE Small Cap value versus growth performance¹

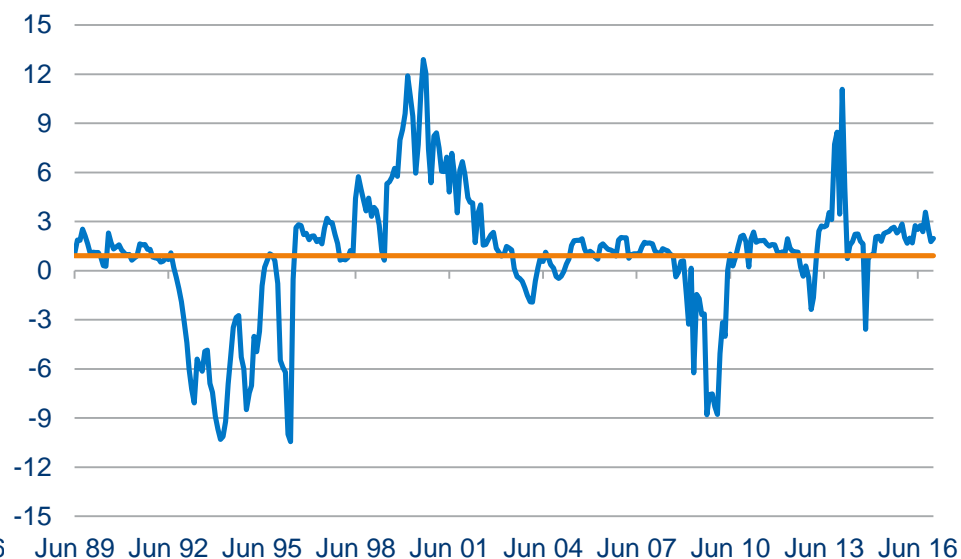
December 31, 2015 = 100



— MSCI EAFE Small Cap
— MSCI EAFE Small Cap Value

— MSCI EAFE Small Cap Growth

Small Cap value versus growth PE FY1²



— S&P EPAC Small Cap growth minus value PE FY1
— Average

¹Source: Datastream, MSCI, 31 December 2016

²Source: Factset, MSCI, 31 December 2016

Performance shown is past performance. Past performance is not necessarily a guide to future performance. The value of investment can go down as well as up and is not guaranteed

Performance Attribution

12 months to 31 December 2016

	State of Alaska International Small Cap		MSCI EAFE Small Cap				
	End Weight	Total Return	End Weight	Total Return	Stock Selection	Regional Allocation	Total Effect
UK	15.2	-14.4	17.6	-10.5	-0.8	0.3	-0.5
Continental Europe	39.2	0.6	38.8	2.9	-1.0	0.1	-0.9
Japan	28.2	2.3	31.7	7.6	-1.3	-0.2	-1.5
Pacific ex Japan	7.8	4.7	11.9	7.5	-0.3	-0.1	-0.4
Emerging Markets	7.4	4.6	-	-	-	0.1	0.1
Cash	2.2	-	-	-	-	0.1	0.1
Residual	-	-	-	-	-	-	0.0
Total	100.0	-0.9	100.0	2.2	-3.4	0.3	-3.1

Top 5 Active Contributors

12 months to December 31, 2016

	Return (%)	Contribution (%)
Logitech International	66.8	0.62
Ambu	32.6	0.32
Aica Kogyo	36.4	0.26
Borregaard	80.6	0.22
Interroll Holding	29.3	0.22

Top 5 Active Detractors

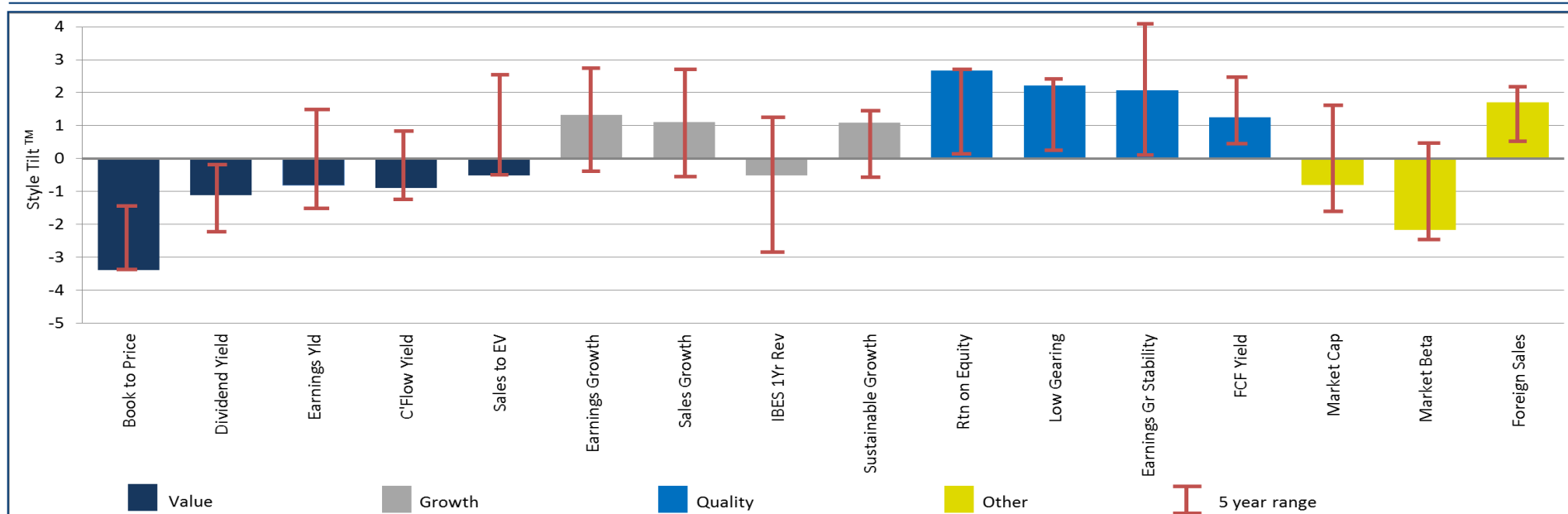
12 months to December 31, 2016

	Return (%)	Contribution (%)
Kumiai Chemical	-43.5	-0.41
windeln.de	-67.9	-0.40
Nippon Densetsu	-26.4	-0.39
Dalata Hotel	-22.4	-0.32
Anima Holding	-34.5	-0.31

Source: Schroders, MSCI, Factset PA2. Gross of fees.

* Stock not held by portfolio, index return shown.

Fund* risk characteristics



Predicted Risk

Tracking Error	2.88%
Beta	0.94
Benchmark Volatility	12.8%
Absolute Fund Volatility	12.4%

(Figures from Style Research unless otherwise stated)

Active Risk Decomposition (from Style Research)

Stock Specific Factor	55.9%
Industrial Sectors	33.3%
Countries (Market)	31.5%
Risk Indices	22.9%
Currency	3.3%
X-Terms	-47.0%

* State of Alaska International Smaller Companies

Source: Schroders Risk Report , Style Research as at December 31, 2016

Portfolio characteristics are subject to change and should not be viewed as an investment recommendation. Please see full disclosures at the end of the presentation.

Fund characteristics

Schroders* vs MSCI EAFE Small Cap Index

As at 31 December 2016

	Schroders*	Index
No of stocks	196	2,228
Free Market Capitalization US\$M		
Minimum	78	75
Maximum	12,537	6,816
Weighted Average	1,571	1,703
Median	868	642

Valuation factors	Schroders*	Index
P/E (12mo trailing)	16.8	15.5
P/CF	11.9	10.8
P/BV	2.0	1.5
LT Debt/Capital	21.4	26.9
ROE	15.5	11.6

	Schroders*	Index
Percentage>\$3Bn	15.3%	14.6%
Percentage>\$1Bn<\$3Bn	32.5%	51.3%
Percentage>\$0.5Bn<\$1Bn	32.4%	21.6%
Percentage<\$0.5Bn	19.8%	12.4%
Total	100.0%	100.0%

Valuation factors	Schroders*	Index
3 Year Sales Growth	8.9	7.5
3 Year Earnings Growth	19.6	16.4
Dividend Payout Ratio	36.5	36.7
Dividend Yield	2.2	2.4

*State of Alaska International Smaller Companies
Source: Schroders, Style Research, Factset

Investment strategy:

Country weightings – State of Alaska International Smaller Companies

We added modestly to continental Europe over the last quarter where we have a small overweight. The main support has been a good flow of attractive bottom up ideas, partly offset by some reduction in peripheral market financials late in the quarter. Economic conditions have been supportive, but progress in equity markets has been hampered by political concerns and the fact that, until very recently, there has been consistent selling from foreign investors. Small cap valuations relative to large are modestly below long-term averages. Key overweights by sector are industrials, information technology and consumer cyclicals, balanced by underweights in health care, real estate and energy.

Remain underweight the United Kingdom. There is some valuation support for smaller caps (at least viz a viz largecap) but the macro economic situation gives increasing cause for alarm. The economic momentum seen currently (partly stoked up by policy mis-steps in the wake of the BREXIT panic) looks increasingly fragile being almost wholly dependent on consumer spending, aided by household savings falling back to pre GFC levels. Overall earnings revisions are negative for small caps despite the resilience in the economy. Weaker sterling should aid exporters, but imported inflation is more of an overall challenge to the economy, and particularly domestically oriented smaller companies.

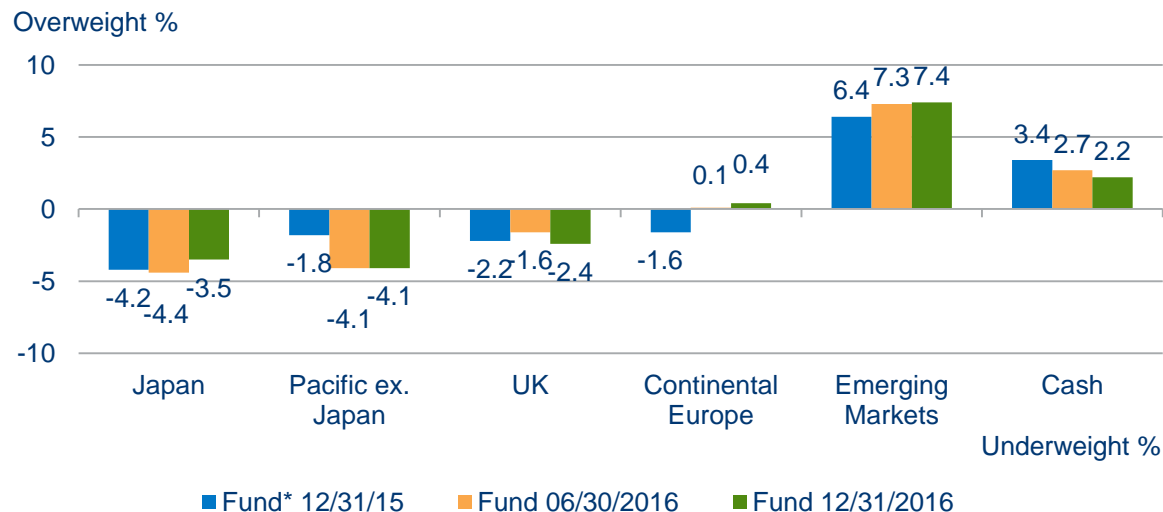
Portfolio remains underweight Japan, but look to add particularly in existing holdings which are somewhat cyclical and have foreign exposure, but have in aggregate lagged over the last year. Market appears supported by an improving revisions cycle, a weaker yen and pro-growth monetary settings with the Bank of Japan in no hurry to follow the lead of bond markets. Protectionism remains a risk to sentiment, with the totemic auto industry firmly in the Trump line of Twitter feed. Corporate governance developments continue to be broadly encouraging, although investor expectations are high.

The modest aggregate overweight to Pacific ex Japan and Emerging Asia masks the fact that the portfolio remains very underweight Australia. Key exposures elsewhere are HK/China, Taiwan, Korea and emerging ASEAN. Our emerging market exposure has been a headwind for 2016 (mainly thanks to the sell-off in the wake of the US elections). Clearly, trade protectionism is seen as the big risk, but may be obscuring the much more powerful benefit (potentially) of stronger global activity.

Source: Schroders, MSCI. *State of Alaska International Smaller Companies

Regional weights are subject to change and should not be viewed as an investment recommendation. This slide contains the views of the International Small Cap Team. These views are subject to change and do not necessarily represent the views of Schroders

Measured against MSCI EAFE Small Cap Index



Fund* weight % at 12/31/2016

28.2	7.8	15.2	39.2	7.4	2.2
------	-----	------	------	-----	-----

Index Weight at 12/31/2016

31.7	11.9	17.6	38.8	—	—
------	------	------	------	---	---

Portfolio positioning

Country Sector Matrix

MSCI EAFE Small Cap Index as of 31 December 2016

	Total	Consumer Discretionary	Consumer Staples	Energy	Financials	Healthcare	Industrials	IT	Materials	Real Estate	Telecoms	Utilities
Cont. Europe	38.8	4.5	2.2	1.5	5.0	3.6	9.1	3.9	3.0	4.2	0.8	1.1
EM	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Japan	31.7	5.7	3.4	0.2	2.8	1.8	7.4	3.7	3.2	3.3	0.0	0.2
Pacific ex Japan	11.9	2.4	0.5	0.4	1.0	0.9	1.5	0.8	1.7	2.1	0.2	0.3
UK	17.6	3.6	0.7	0.9	2.6	0.8	3.7	2.0	1.3	1.5	0.1	0.3
Total	100.0	16.1	6.9	3.0	11.4	7.0	21.7	10.4	9.3	11.1	1.1	1.9

Portfolio*** as of 31 December 2016

	Total	Consumer Discretionary	Consumer Staples	Energy	Financials	Healthcare	Industrials	IT	Materials	Real Estate	Telecoms	Utilities
Cont. Europe	39.2	7.3	2.8	0.0	4.4	0.4	11.7	6.2	4.3	0.9	0.0	1.2
EM	7.4	2.6	0.2	0.2	0.2	0.8	2.0	0.9	0.5	0.0	0.0	0.0
Japan	28.2	3.7	2.3	0.0	1.1	1.6	9.9	4.3	3.5	1.8	0.0	0.0
Pacific ex Japan	7.8	2.3	0.7	0.0	0.2	0.7	0.9	1.3	1.1	0.5	0.0	0.0
UK	15.2	3.9	0.4	0.8	1.2	0.6	4.1	1.8	0.6	1.4	0.0	0.5
Total*	97.8	19.9	6.3	1.0	7.1	4.1	28.6	14.6	10.0	4.6	0.0	1.7

Portfolio*** vs. MSCI EAFE Small Cap Index

	Total	Consumer Discretionary	Consumer Staples	Energy	Financials	Healthcare	Industrials	IT	Materials	Real Estate	Telecoms	Utilities
Cont. Europe	0.4	2.8	0.6	-1.5	-0.6	-3.2	2.6	2.4	1.3	-3.3	-0.8	0.2
EM	7.4	2.6	0.2	0.2	0.2	0.8	2.0	0.9	0.5	0.0	0.0	0.0
Japan	-3.5	-2.0	-1.1	-0.2	-1.7	-0.2	2.5	0.7	0.3	-1.5	0.0	-0.2
Pacific ex Japan	-4.1	0.0	0.2	-0.4	-0.8	-0.2	-0.6	0.5	-0.6	-1.6	-0.2	-0.3
UK	-2.4	0.3	-0.3	-0.1	-1.4	-0.2	0.3	-0.2	-0.8	-0.1	-0.1	0.2
Total**	-2.2	3.8	-0.6	-2.0	-4.3	-3.0	6.9	4.2	0.6	-6.5	-1.1	-0.2

* Cash 2.2%

** Difference due to 2.2% cash weighting

*** State of Alaska International Smaller Companies

Source: Schroders, MSCI.

Weights by region and sectors are subject to change and should not be viewed as an investment recommendation

Recent Stock Transactions

State of Alaska International Smaller Companies

Significant New Buys since December 31, 2015

Security	Country	Weight December 31, 2016 %
Coor Service Management	Sweden	0.9
Kingspan Group	Ireland	0.8
Van Lanschot	Netherlands	0.7
Lenzing Ag	Austria	0.7
Bravida Holding	Sweden	0.6
u-blox Holding	Switzerland	0.5
Technogym S.P.A	Italy	0.5
Mando Corp	Korea	0.5
SPIE SA	France	0.5
Dunelm Group	United Kingdom	0.5

Significant Complete Sales since December 31, 2015

Security	Country	Weight December 31, 2015 %
Montupet Sa	France	1.2
OC Oerlikon	Switzerland	0.8
Fincobank Spa	Italy	0.6
Banca Popolare di Milano	Italy	0.6
Credito Emiliano	Italy	0.5
BPER Banca S.p.A.	Italy	0.5
HKBN Ltd.	Hong Kong	0.5
Korian Sa	France	0.4
Storebrand Asa	Norway	0.4
MITIE Group	United Kingdom	0.4

Source: Schroders

Top ten holdings by region

State of Alaska International Smaller Companies – December 31, 2016

Europe

Country	Security	Weight in fund %	Weight in region %
Switzerland	Logitech International	1.5	3.9
Sweden	Loomis Ab	1.3	3.4
Italy	Cerved Information Solutions	1.3	3.4
France	Rubis & Cie	1.2	3.2
Germany	Stabilus Sa	1.2	3.1
Switzerland	Ascom Holding	1.2	3.1
Ireland	Dalata Hotel	1.2	3.0
Italy	YOOX Net APorter	1.1	2.8
Germany	Braas Monier	1.1	2.7
France	Ubisoft Entertainment	1.1	2.7
Total		12.2	31.3

Japan

Country	Security	Weight in fund %	Weight in region %
Japan	Nitta Corporation	1.2	4.2
Japan	Digital Garage,	1.2	4.2
Japan	Arcs Company,	1.1	3.9
Japan	Tokai Tokyo Financial	1.1	3.9
Japan	Nippon Densetsu	1.1	3.9
Japan	Daibiru Corporation	1.1	3.8
Japan	Nihon Parkerizing	1.1	3.7
Japan	Hitachi Transport	1.0	3.7
Japan	Trusco Nakayama	1.0	3.6
Japan	Tsuruha Holdings,	1.0	3.6
Total		10.9	38.5

UK

Country	Security	Weight in fund %	Weight in region %
UK	Supergroup Plc	0.6	3.7
UK	Dechra Pharmaceuticals	0.6	3.7
UK	Kennedy Wilson	0.5	3.4
UK	Northgate Plc	0.5	3.4
UK	Homeserve Plc	0.5	3.4
UK	SSP Group	0.5	3.3
UK	Telecom Plus	0.5	3.3
UK	Dunelm Group	0.5	3.3
UK	Ricardo Plc	0.5	3.0
UK	DCC Plc	0.5	3.0
Total		5.2	33.5

Asia ex. Japan, Emerging Markets

Country	Security	Weight in fund %	Weight in region %
Hong Kong	Techtronic Industries	0.9	6.0
Australia	Computershare Limited	0.6	4.1
Korea	Mando Corp	0.5	3.5
Australia	Iluka Resources	0.5	3.4
Taiwan	Aerospace Industrial Development	0.5	3.3
Australia	Fairfax Media	0.5	3.1
Australia	Ansell Limited	0.4	2.9
Hong Kong	ASM Pacific Technology	0.4	2.8
New Zealand	Fletcher Building	0.4	2.7
Taiwan	Chroma Ate	0.4	2.7
Total		5.1	34.5

Source: Schroders

Investment Outlook and Strategy



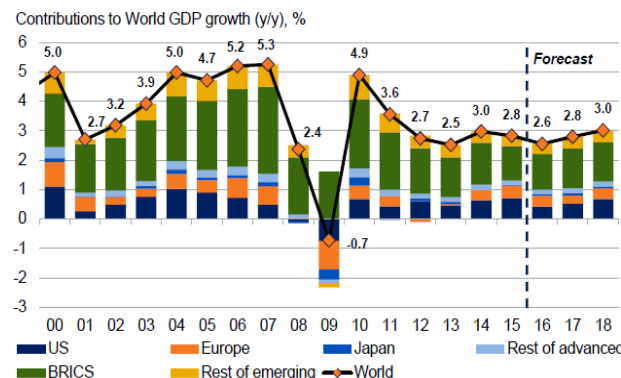
Schroders

Overview

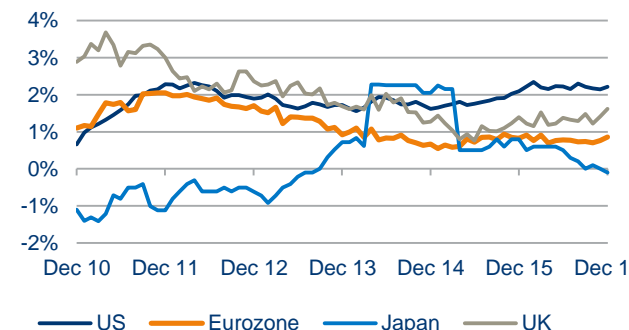
Could 2017 be the year of normalization?

- Consensus forecasts are for continuation of muted global recovery, with around two thirds coming from emerging markets.
- Some divergence in the inflation experience, and recent commodity and currency moves could see rising inflation in UK, Europe and Japan.
- Interest rates continue to reflect the pro-active stance of Central Banks, although yield curves have been steepening.
- Inventories generally very lean so end demand could have a powerful effect on industrial production

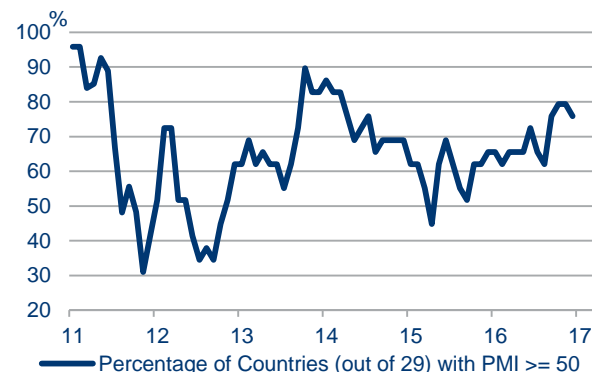
World GDP forecast¹



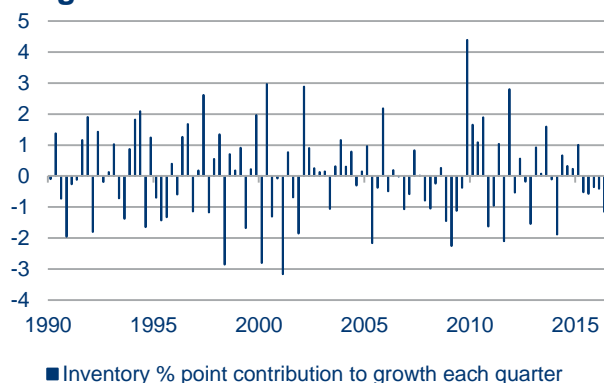
Core inflation rates diverge as the US rises²



Global growth synchronising³



Inventories have taken a cumulative 3p.p. off growth since Q2 2015⁴



¹Source: Thomson Datastream, Schroders Economics Group, November 2016

²Source: Thomson Reuters Datastream, 31 December 2016

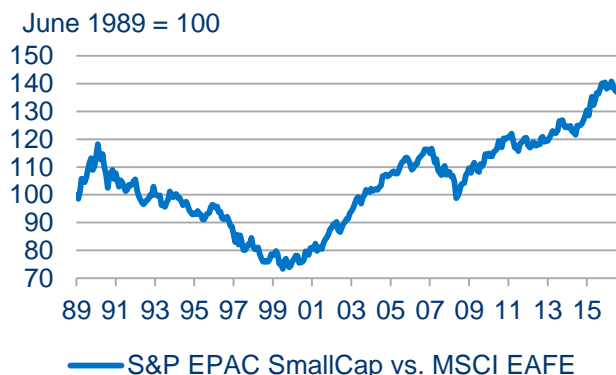
³Source: BofA Merrill Lynch Global Research, Haver, Bloomberg, Schroder, Datastream. January 2017

⁴Source: Credit Suisse, Thomson Datastream. December 2016

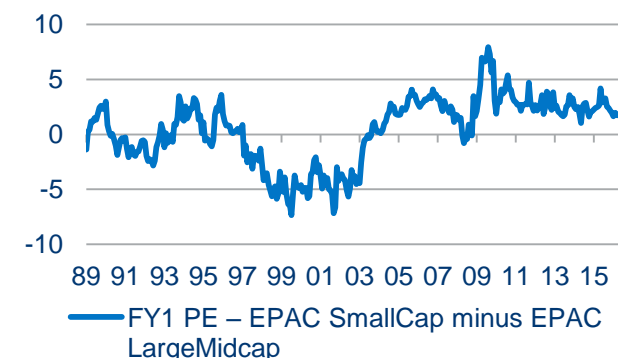
Small Cap Valuations

- Small caps offer reasonable value by historic standards based on cyclically adjusted PERs and Price to book value
- Compared to large cap peers, valuations are reasonable, but not particularly attractive in absolute terms
- Continued earnings momentum is critical

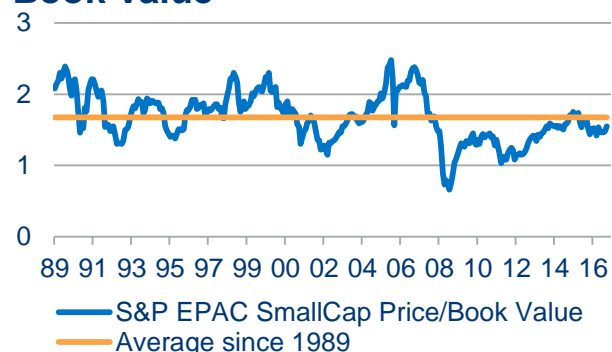
S&P EPAC SmallCap Index vs. MSCI EAFE Index¹



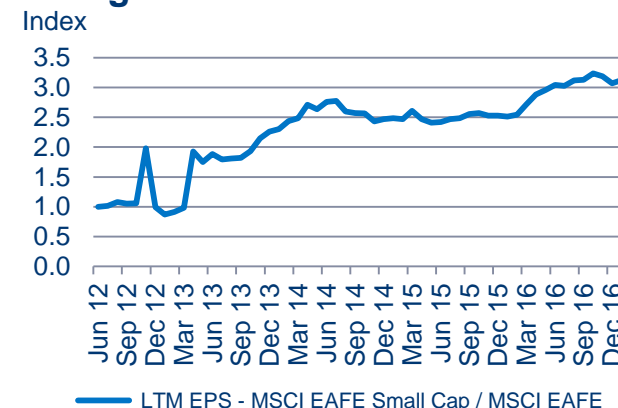
FY1 PE – S&P EPAC SmallCap minus S&P EPAC LargeMidCap²



Not extended on Price/Book Value³



EPS growth⁴



¹Source: Schroders, S&P, MSCI, 31 January 2017

²Source: Schroders, FactSet PA2, S&P, 31 January 2017

³Source: Schroders, S&P, 31 January 2017

⁴Source: FactSet MSCI, 31 January 2017

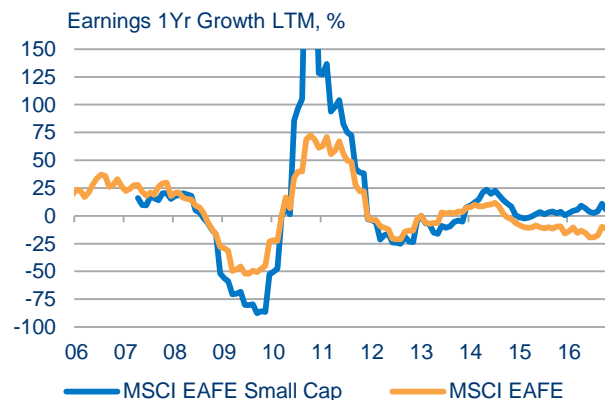
Performance shown is past performance. Past performance is not necessarily a guide to future performance. The value of investment can go down as well as up and is not guaranteed

Investment outlook

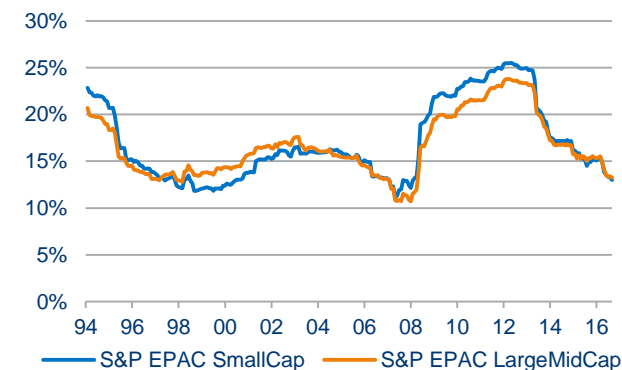
Long term trends

- Smallcap earnings growth continues to outpace largecap, although the long-term does not support this as an enduring trend.
- Smallcap volatility currently similar to large after the GFC effect. Some interesting divergencies in correlations with UK and Japan falling markedly.
- Universe has continued to grow, but entirely thanks to Asia ex Japan, with growth in Hong Kong and Korea. In other markets, IPO volumes have been modest, so not offsetting natural attrition (failure/M&A)

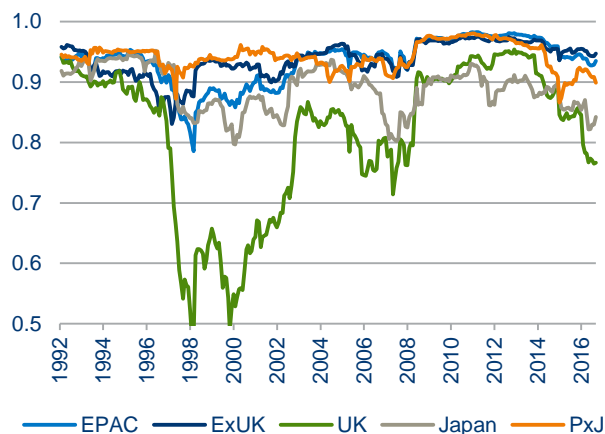
Earnings growth¹



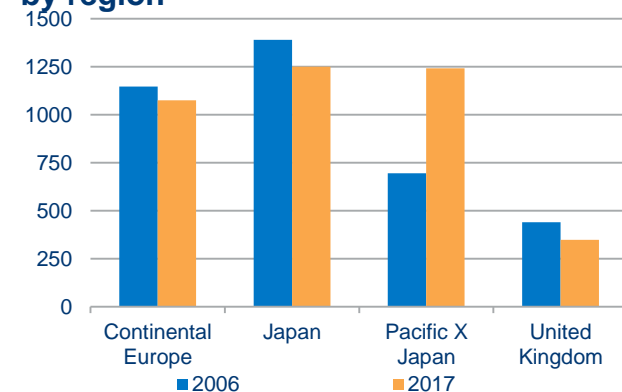
Volatility²



Correlations²



Number of stocks – S&P EPAC SmallCap by region¹



¹Source: Factset, January 2017

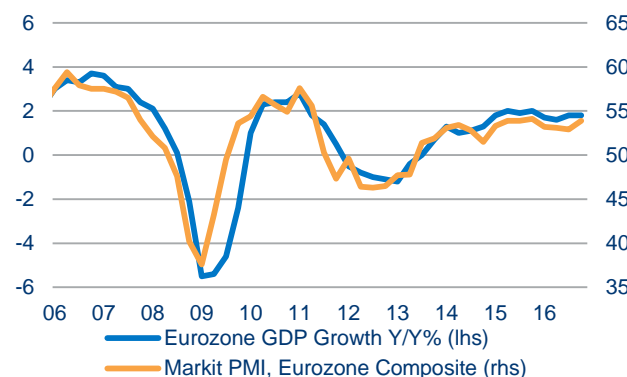
²Source: Thomson Datastream. January 2017

Investment outlook

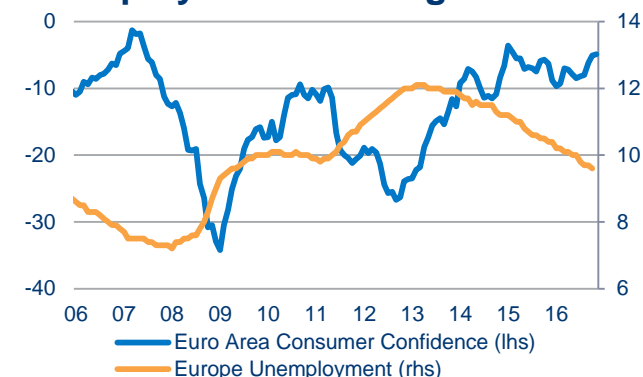
Continental Europe

- Amid all the noise (ECB policy settings/BREXIT), the euroland economy continues its solid expansion, with leading indicators and consumer sentiment remaining resilient.
- Loan growth has been positive for over a year, but remains relatively modest reflecting continued fragility of the banking system.
- Politics is likely to dominate near-term sentiment.

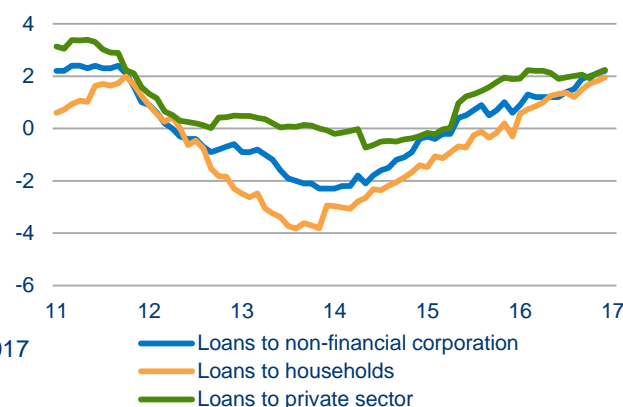
Leading indicators supportive¹



Consumer confidence steady and unemployment is falling²



Loans 12mth % change³



Political risk is here to stay⁴

Country	Event risk	Date	Probability	Market impact
Netherlands	General election	15 Mar 2017	High	Medium
UK	Article 50 triggered	By Mar 2017	High	Low
France	Presidential elections	23 Apr & 7 May 2017	Low	Extreme
Germany	Federal election	Aug-Oct 2017	Very low	Extreme
Italy	Italian snap election	Mid-17/ early 18	Medium	High

¹Source: Thomson Datastream, Markit. Updated January 2017

²Source: Thomson Datastream. Updated January 2017

³Thomson Datastream, Updated January 2017

⁴Schroders Economics Group. As at 30 January 2017

Performance shown is past performance. Past performance is not necessarily a guide to future performance. The value of investment can go down as well as up and is not guaranteed

Investment outlook

United Kingdom

- Reaction to Brexit pretty much instant. Small cap and domestic names sold off dramatically
- Growth forecasts sharply reduced – and inflation expectations have risen
- Both consumer and business measures fell sharply on the Brexit vote and then rebounded, but more recently business confidence has strengthened whilst consumers have become more pessimistic
- Despite the news flow, cyclically adjusted valuations are still near their long-term average

Source:

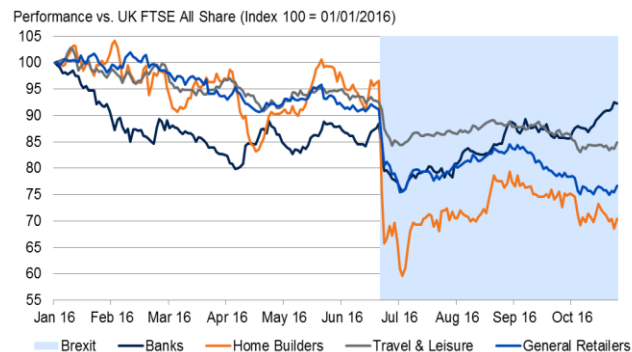
¹Thomson Datastream, Schroders Economics Group. Updated October 2016.

²Focus Economics survey, Schroders Economics Group. Updated October 2016.

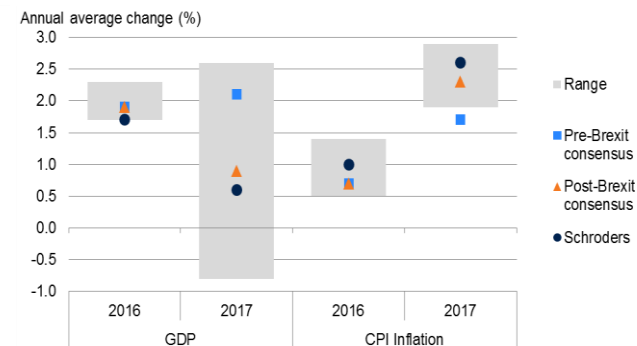
³Thomson Reuters Datastream, Schroders Economics Group, 25 January 2017

⁴Citi. January 31, 2017

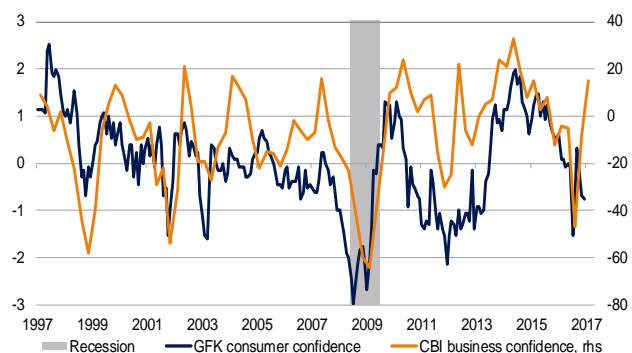
Domestic UK stock sharply underperform¹



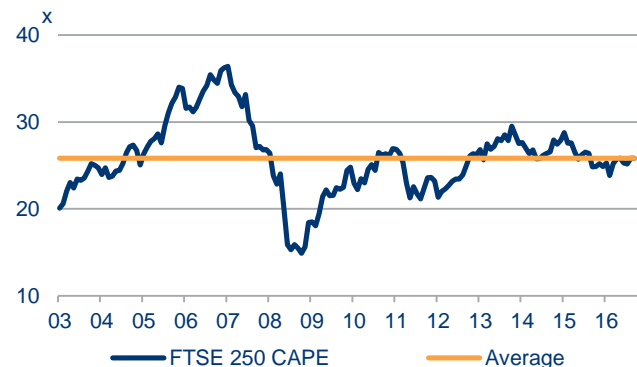
How Brexit has changed UK forecasts²



UK confidence indicators diverge³



FTSE 250 CAPE⁴



Investment outlook

Japan

- Export volumes remain moribund and yen has strengthened despite negative interest rate policy being introduced
- Stronger yen is a challenge for Abenomics as corporate behaviour is a key component
- Market has voted – unprecedented premium for “defensiveness”
- Signs of more independent voices in boardrooms. Small companies catching up with larger peers

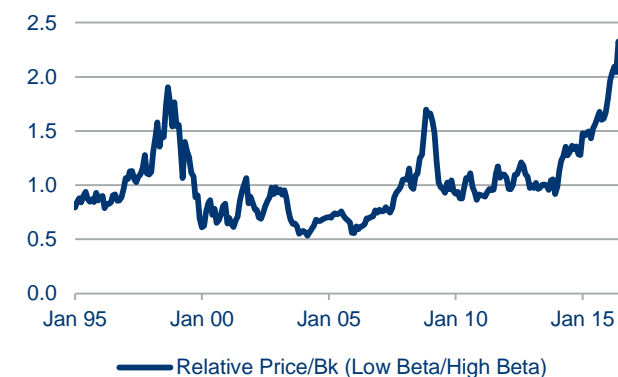
The yen has strengthened despite NIRP¹



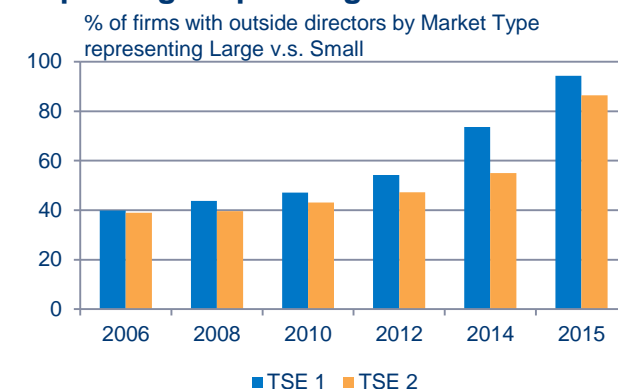
Top performing industries³

Industry	H1 2016 %
Household Products	61.6
Biotechnology	44.3
Containers & Packaging	29.3
Multiline Retail	25.4
Beverages	25.2
Food Products	23.5
Food & Drug Retailing	21.5
Reits	21.2
Electric Utilities	21.2
Leisure Products	20.0
Japan	2.6

Defensives expensive²



Improving corporate governance⁴



¹Source: Thomson Datastream. January 31, 2017

²Source: Daiwa Securities. January 31, 2017

³Source: Factset PA2. US\$. June 30, 2016

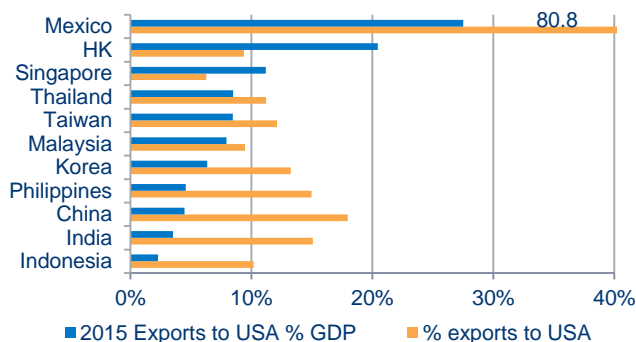
⁴Source: MUMSS, from TSE materials. Note preliminary figures for 2015

Investment outlook

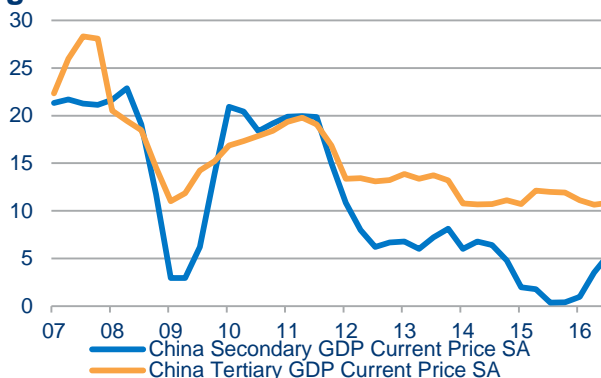
Asia ex Japan

- Concern over potential trade protectionism has impacted Asian exporters but economic data surprising on upside
- In China, stimulus and rising commodity prices have seen “old economy” growth stabilise
- Asia’s external balances are improving significantly, but key issue is domestic credit expansion. Different from 1997/98 crisis, but may make internal price adjustment more difficult.
- Credit conditions tight in Chinese private sector, and across Asia in general. Scope for management and balance sheet strength to be rewarded.
- Main underweight remains in Australia given valuations and commodity price impact.

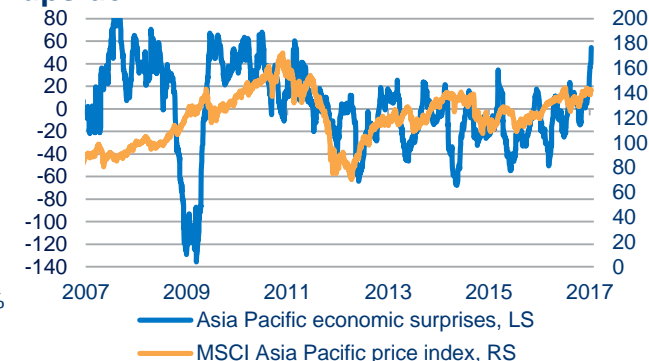
Tariff risk – exports to USA¹



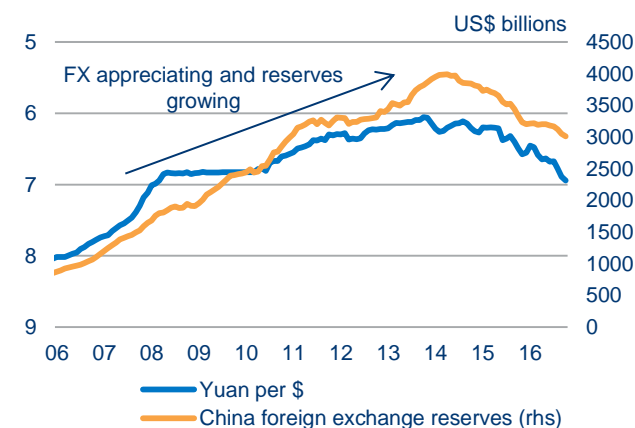
Nominal Chinese GDP – divergent growth³



Asia Pacific economic data surprising on upside²



Renminbi no longer a one way bet³



¹Factset, Thomson Datastream. December 2016

²BofA Merrill Lynch Global Research, Bloomberg, Citigroup. January 2017

³Bloomberg. Updated January 2017

Countries and sectors shown are for illustrative purposes only and should not be viewed as a recommendation to buy or sell

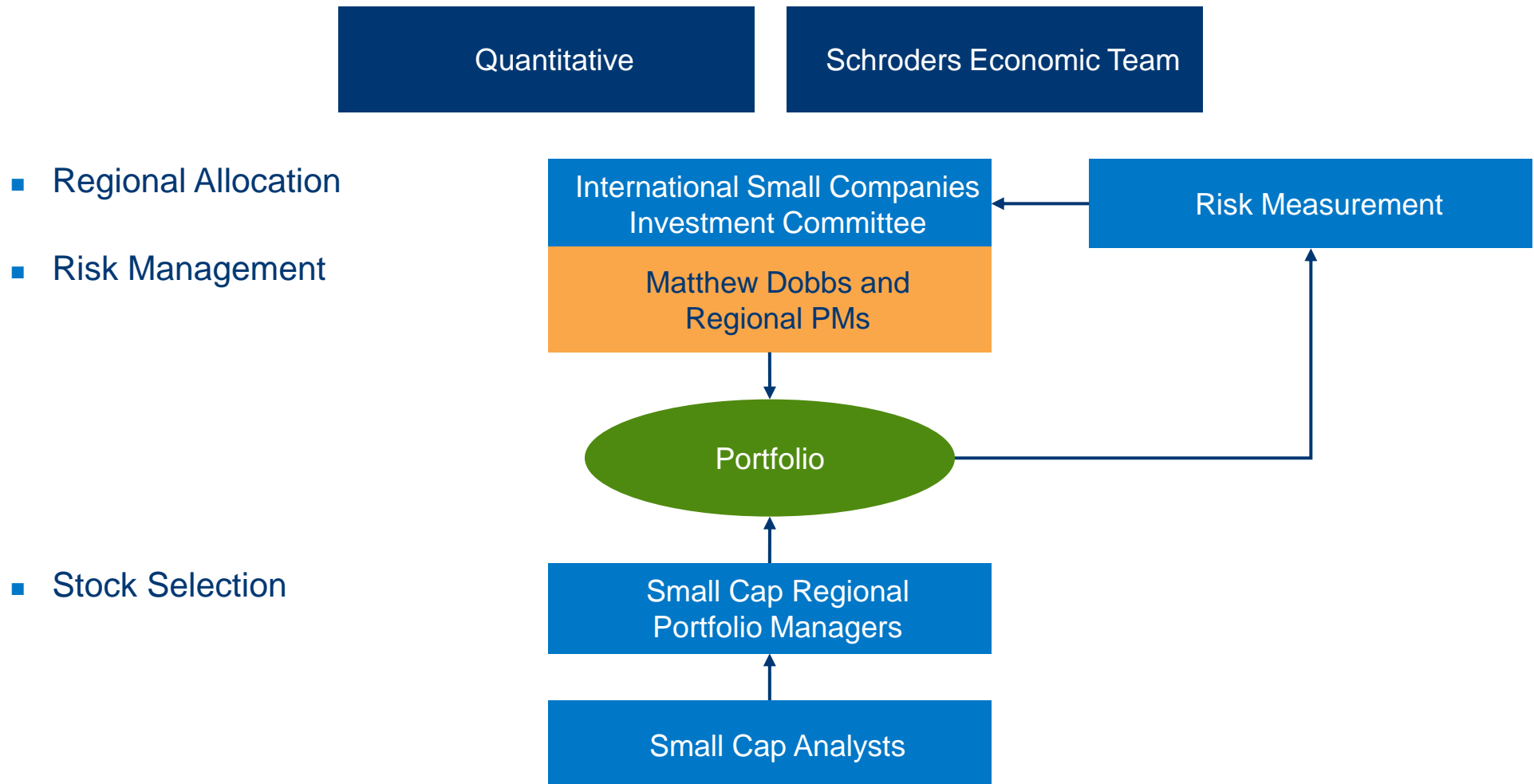
Appendix



Schroders

Investment process

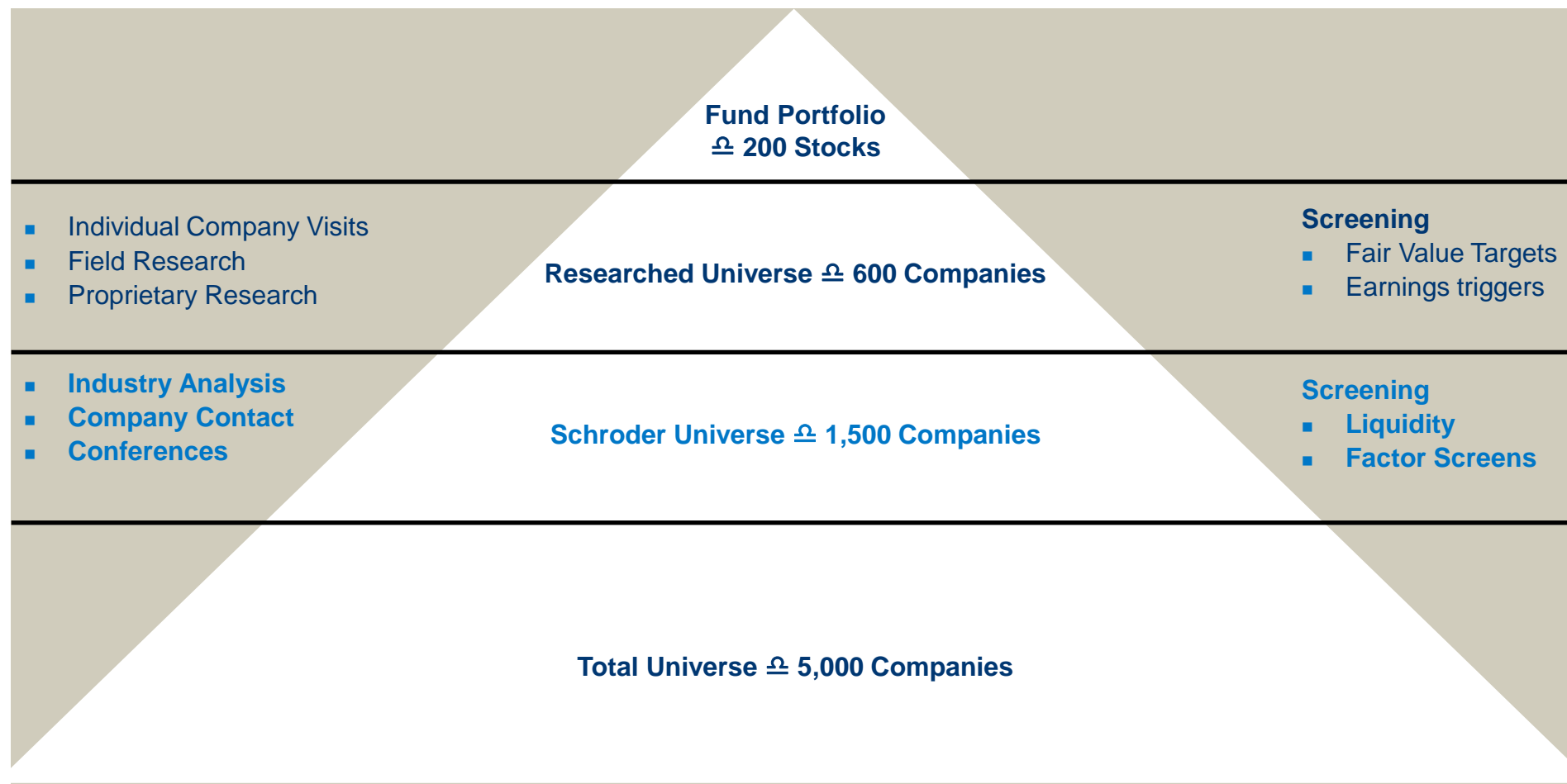
Overview



Source: Schroders as of December 31, 2016

Investment process

Stock selection



Source: Schroders as of December 31, 2016

Investment process

What we look for in investments

Quantitative

Sustainable Growth

- High real EPS growth
- Visibility of earnings
 - Strong product or service franchise
 - Strong market share
 - Beneficiary of structural change
- Limited financing risk

Qualitative

Management Assessment

- Interest in shareholder value
- Focused strategy
- Sound business practices
- Historic record of success
- Length of time with company

Investment process

Sell discipline

Our methodology seeks to identify holdings that offer poor relative potential and in which conviction is low

The decision to sell a position may be based on:

- Position reaches fair value target price
- Opportunity cost perceived in comparison to alternative investment
- Fundamental deterioration makes original target price no longer appropriate

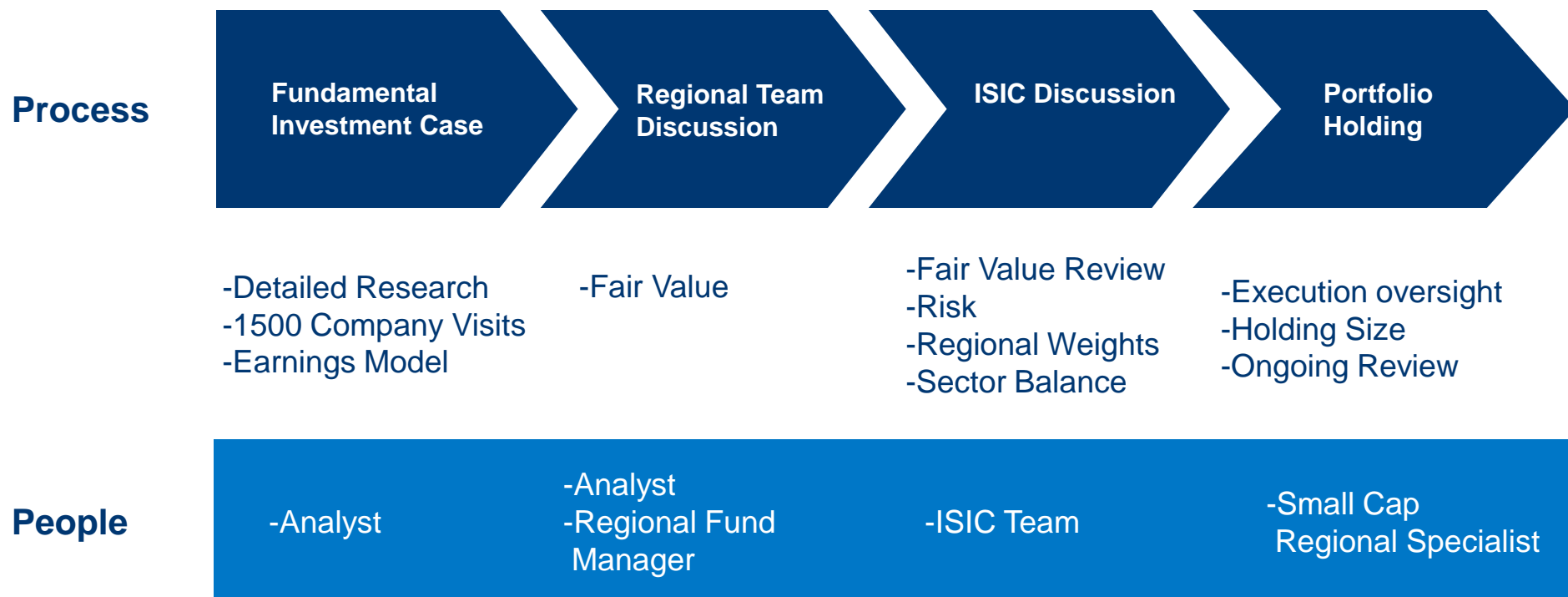
Investment process

Portfolio construction – Overview

- Smallcap regional portfolio managers have primary responsibility for regional portfolio construction, but all stocks reviewed by team prior to purchase
- Regional and Sectoral weightings are reviewed by small cap team (ISIC)
 - Amend/confirm Regional Allocation targets
 - Ensure compliance with Risk/Return expectations
 - Avoid unintended biases (i.e. sector over-concentration)
- Supplemented by ongoing monitoring of overall portfolio by Matthew Dobbs

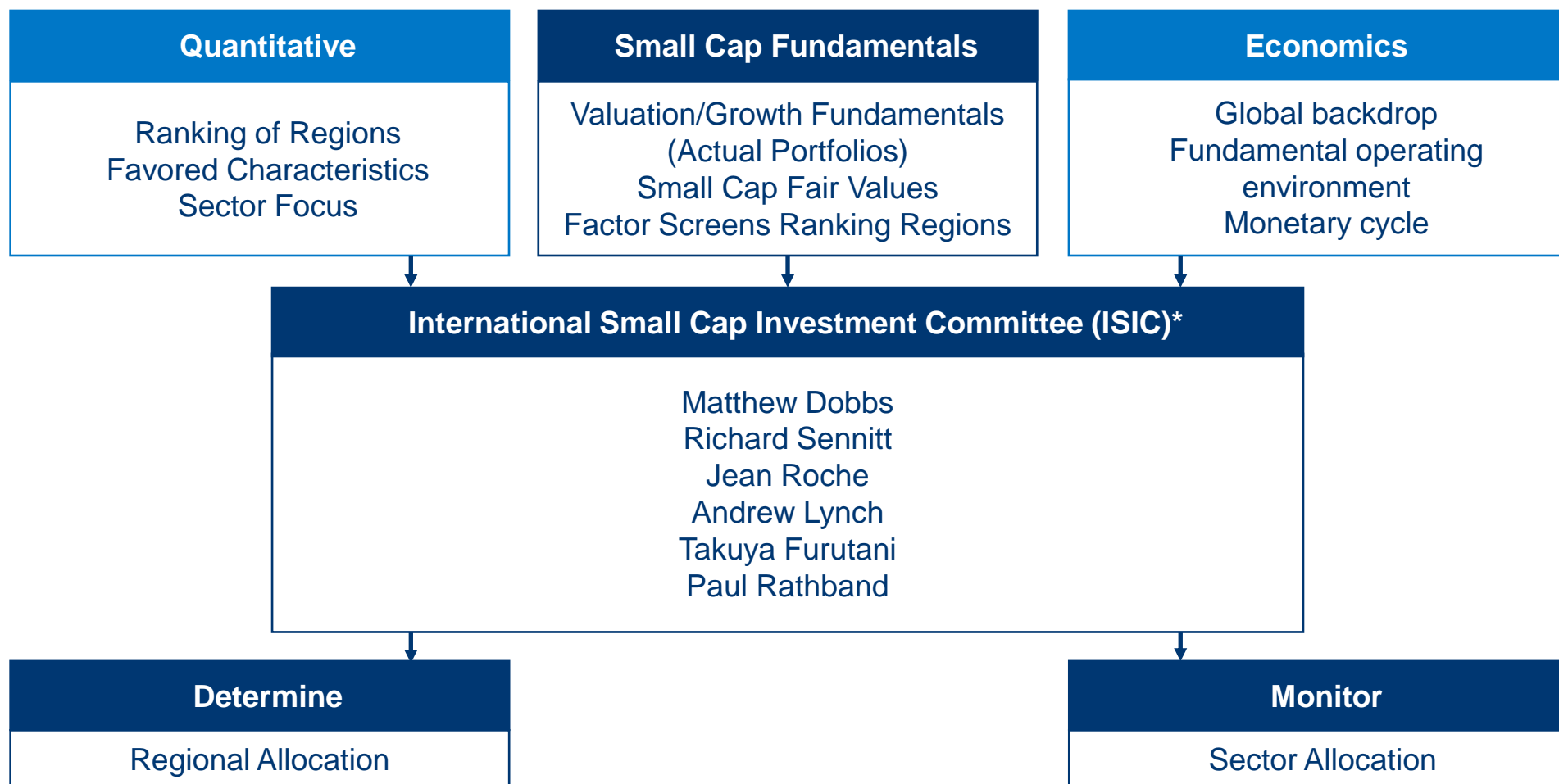
Investment process

Portfolio construction – Building stock portfolios



Investment process

Portfolio construction – Regional allocation



* Source: Schroders as of December 31, 2016

Investment process

Controlling portfolio risk

PRISM brings together alternative risk measurement and management tools into a single report

- Online
- Interactive

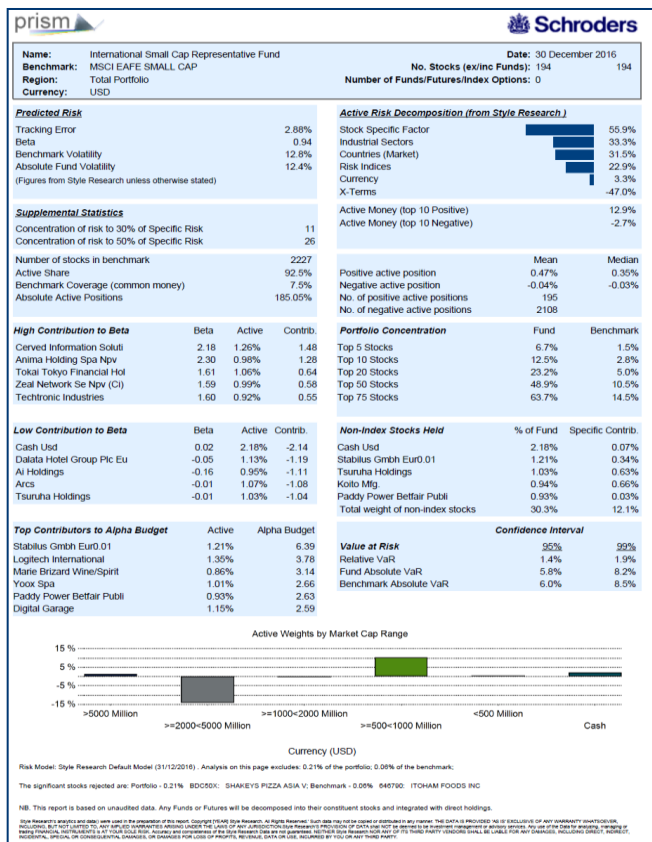
PRISM integrates both internal and external tools

- Risk analysis
- Characteristics analysis
- Other statistical measures

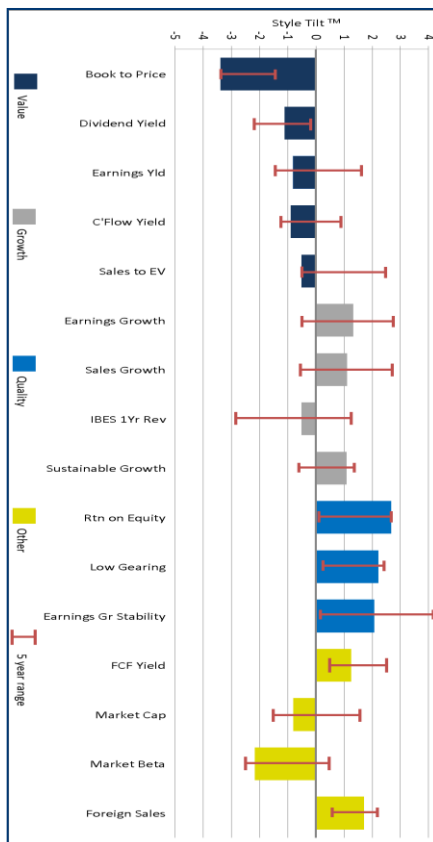
The PRISM Risk Report identifies active risk and the sources of risk by decomposing active portfolio positions into Stock Specific/Sector and Style factors

Portfolio risk investment strategy manager – overview

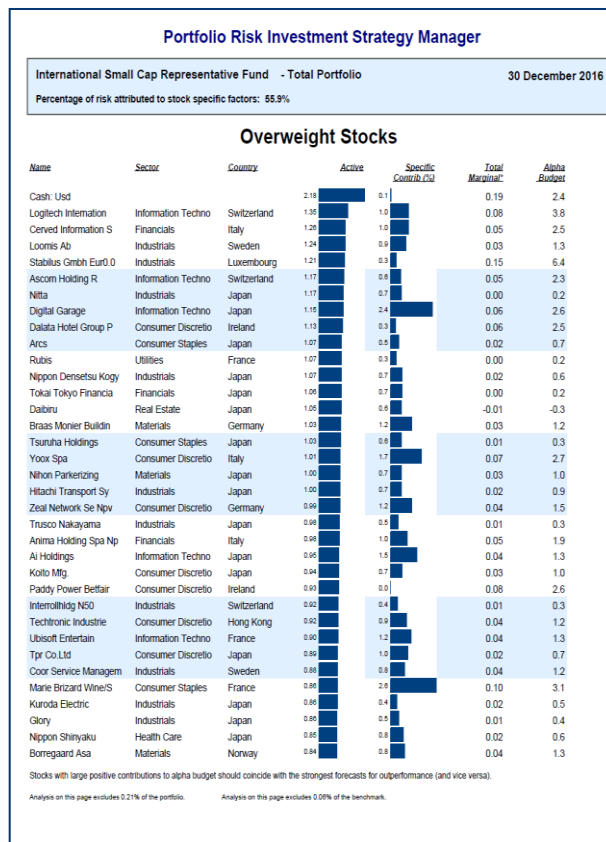
Overview



Characteristics



Stock Detail



The security and portfolio information shown is for a representative account within the MSCI EAFE Small Cap Composite. The information is intended to illustrate the risk management process and should not be viewed as a recommendation to buy/sell. See the Composite Disclosure and Performance information at the end of this presentation.

Risk management

Risk management guidelines

- Cash not to exceed 5% of the value of a portfolio
- Stock weights: No formal limits, but generally between +/- 2% relative to the benchmark
- Sector weights: No formal limits, but generally between +/- 7% relative to benchmark
- Country weights: No formal limits, but generally between +/- 7% relative to the benchmark
- Emerging Markets subject to client preference
- Derivatives: Not used

Please note the benchmark will depend on the client preference i.e. S&P EPAC SmallCap, MSCI EAFE Small Cap etc.

Biographies

Portfolio Manager

Matthew Dobbs joined Schroders in 1981. Following 4 years in Research, Matthew has been involved in both global and specialised Pacific Basin portfolio management. He took overall responsibility for international and global SmallCap in 2000 having been, prior to that, Pacific ex Japan SmallCap specialist, and has held a SmallCap role since 1996

Europe

Jean Roche joined Schroders in January 2016 as a member of the Pan European SmallCap team. Jean graduated with a first class honors MSc degree in Financial and Industrial Mathematics from Dublin City University, and BA Mathematics and French from National University of Ireland, Galway. She joined Morgan Stanley's equity research department in 1999. Jean held senior research and analyst positions at HM Treasury, Arbuthnot Securities and Panmure Gordon, before joining Hargreave Hale (Marlborough Funds) as a fund manager in 2013. Jean is a CFA charterholder

Andrew Lynch is a Pan-European SmallCap specialist. He joined Schroders in 1998 having completed internships within the Schroder Group. He manages a mixture of institutional funds and unit trusts. Andy has a degree in Politics, Philosophy and Economics from Balliol College, Oxford

Andy Brough graduated from Manchester University with a Degree in Economics before joining Price Waterhouse where he qualified as a Chartered Accountant. He joined Schroders in 1987. He is Head of our UK Smaller Companies Fund Management Team. Andy has specialised in SmallCap since 1987

Luke Biermann graduated from Bath University with a 1st Class Honours BSc degree in Computer Science. He joined Schroders in October 2006, and has joined the SmallCap team as an analyst

Iain Staples joined Schroders in January 2012 as a UK SmallCap analyst. He joined with thirteen years of prior experience as a UK equity analyst covering a wide range of sectors, and prior to that four years as a management consultant. He holds an MA degree in mathematics from Cambridge University, and a BSc from UMIST in Theoretical Physics

Hannah Piper joined Schroders in July 2012 as a Pan-European SmallCap Analyst. After graduating from Durham University with a BSc degree in Natural Sciences she joined Price Waterhouse Coppers where she qualified as a Chartered Accountant. Hannah joins us with 2 years investment experience most recently at UBS Securities where she was a top rated chemicals analyst

Alexander Deane joined Schroders as a smallcap equity analyst in September 2015, covering a range of Emerging Markets and Canada. He joins with five years investment experience, most recently as an analyst at Berenberg in London following UK capital goods companies. He is a Graduate of Nottingham University, and a Spanish speaker

Biographies

Japan

Takuya Furutani joined Schroders as a smallcap analyst in November 2003. He was formerly with Lombard Odier Darier Hentsch, and prior to that Commerz International Capital Management. His investment career commenced in 1994. He has a degree in Business Administration from Northeastern University, Boston

Andrew Rose is a graduate in Japanese and Politics, University of Sheffield and spent a year on a Japanese Government Scholarship to Kobe University to study International Economics. He joined Schroders in 1981 as an analyst, moving to Tokyo in 1984 for three years. Returning to London in 1987, he was responsible for Japanese equity investments for SIM UK and continental European clients. He was seconded to SIM (Japan) as Senior Investment Officer in 1996 with responsibility for Schroders' Japanese equity and SmallCap policy. He has held his SmallCap responsibilities for 16 years

Ayumi Kobayashi joined Schroders in July 2004. She was previously an equity analyst with Yasuda Asset Management, and started her investment career in April 1990. Ayumi has a degree in law from Sophia University, an MBA from Insead and is a CMA

Kota Takahashi joined Schroders as a Japanese smallcap analyst in February 2013. His investment career commenced upon joining Goldman Sachs Asset Management in 2006 as a Japanese equity small cap portfolio manager, as well as covering machinery, and the Internet and Game sector as a sector analyst from 2008. Kota is a graduate of Keio University and is a CFA charterholder

Biographies

Pacific ex. Japan

Paul Rathband joined Schroders in August 2011 as an Asian Small Cap analyst based in Singapore. His investment career commenced in 1991 in Hong Kong with W.I. Carr Securities, covering Hong Kong, Singapore and Malaysian markets. He joined Schroders from RBS Asia Securities in Singapore, where he was Managing Director and responsible for Asia ex Japan research sales. Prior to RBS, Paul was at Arab Malaysian Securities based in Kuala Lumpur

Richard Sennitt joined Schroders in October 1993 as a Japanese analyst, and has managed specialist Asian equities since 1997. He joined the small cap team in December 2007. He is a member of the International Small Cap Investment Committee and Co-manager of Global Small Cap Funds. Richard is a graduate of Oxford University, an Associate Member of UKSIP and is a member of the CFA Institute

Yoon Hee Kyoung joined Schroders in 2007 as a smallcap analyst covering smallcap consumer and service stocks in Korea. She has had experience working in both securities and asset management companies in a research capacity. She holds a degree in Arts and Economics from the State University of New York

Kim Young Roe joined Schroders in April 2008 as an analyst covering construction, shipbuilding and infrastructure stocks in Korea. His investment analytical career started in 1999, and he has since held appointments in both domestic and foreign-owned securities companies. He has a BA degree from Seoul University

Jacqueline Kuek joined Schroders in December 2005 as an equity analyst with the Asia ex Japan team with responsibility for Singapore stocks. She became a member of the Global Smallcap team in June 2009. Her investment career commenced upon joining Morgan Stanley as a research analyst in 2000. She holds a degree in Accountancy from Nanyang Technological University, and is both a CFA Charterholder and a Certified Public Accountant

Jing Li joined Schroders in November 2010 as an analyst based in Hong Kong covering Hong Kong and Chinese smallcap stocks. She was formerly with a small Hong Kong based private equity company, and prior to that Morgan Stanley where her investment career commenced in 2004. She has a BA in Economics/Computer Science from Smith College

Rebecca Xu joined Schroders in June 2010 before transferring to Hong Kong in August 2011 to work as an equity analyst responsible for Chinese equity research. Her investment career commenced in 2009 with RBS where she was an investment banking analyst. She has a MPhil in Management from the University of Cambridge and a BA in Journalism and Communication from Tsinghua University. Rebecca joined the SmallCap Team as an analyst in September 2012

Gina Kim Ji Yong joined Schroders in Singapore in September 2012 as a SmallCap analyst. Gina has eight years of experience as a stock analyst, with four years of consulting prior to that. She is a graduate of Cambridge University, and a CFA charterholder

Nina Chen joined Schroders in March 2016 as an analyst based in Taiwan and is responsible for Taiwan SMID and Regional Textiles stocks. She joined Schroders from Nan Shan Life Insurance Company. Nina is a Bachelor of Economics from National Taiwan University and holds a MBA in International Trade from National Cheng-Chi University

Important Information

Risks associated with International Small Companies: All investments involve risks including the risk of possible loss of principal. The market value of a fund's portfolio may decline as a result of a number of factors, including adverse economic and market conditions, prospects of stocks in the portfolio, changing interest rates, and real or perceived adverse competitive industry conditions. Investing in foreign securities, may magnify risks due to changes in foreign exchange rates and the possibility of substantial volatility due to political and economic uncertainties in foreign countries. Investments in small capitalization companies generally carry greater risk than is customarily associated with larger capitalization companies, which may include, for example, less public information, more limited financial resources and product lines, greater volatility, higher risk of failure than larger companies, and less liquidity

The views and forecasts contained herein are those of the International Small Cap team and are subject to change. The information and opinions contained in this document have been obtained from sources we consider to be reliable. No responsibility can be accepted for errors of facts obtained from third parties. Reliance should not be placed on the views and information in the document when taking individual investment and/or strategic decisions

The opinions stated in this presentation include some forecasted views. We believe that we are basing our expectations and beliefs on reasonable assumptions within the bounds of what we currently know. However, there is no guarantee that any forecasts or opinions will be realized

Past performance is no guarantee of future results. The value of an investment can go down as well as up and is not guaranteed

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www.schroders.com/us

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The returns presented represent past performance and are not necessarily representative of future returns which may vary. The value of investments can fall as well as rise as a result of market or currency movements. Exchange rates may cause the value of overseas investments and the income from them to rise or fall. Funds that invest in smaller companies that may be less liquid than in larger companies and price swings may therefore be greater than in larger companies funds

Performance Figures

Performance figures are presented on a "gross basis" not reflecting the deduction of investment advisory fees.

Index Benchmark Comparison

Performance is compared to the MSCI EAFE Small Cap Index, a widely accepted benchmark for International equity accounts. This index is unmanaged and does not reflect the deduction of any fees or expenses.

Past Performance

The returns presented represent past performance and are not necessarily representative of future returns which may vary. The value of investments can fall as well as rise as a result of market or currency movements

Opinions

Schroders has expressed its own views and opinions in this presentation and these may change

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March 2017

Mondrian Investment Partners

Mandate: International Small Cap

Hired: 2010

Firm Information	Investment Approach	Total ARMB Mandate
<p>Mondrian Investment Partners Limited (“Mondrian”) is 100% owned by an employee partnership.</p> <p>As of 12/31/16, the firm’s total assets under management were \$59 billion.</p> <p>Key Executives:</p> <p>Dr. Ormala Krishnan, <i>CIO – Small Cap Equities</i></p> <p>Todd Rittenhouse, <i>Senior Vice President, Client Services</i></p>	<p>Mondrian’s value driven investment philosophy is based on the belief that investments need to be evaluated in terms of their fundamental long-term value. Mondrian is an active value-oriented defensive manager that evaluates developed markets on a consistent currency adjusted real return basis. In the management of international/global equity assets, Mondrian invests in securities where rigorous dividend discount analysis identifies value in terms of the long-term flow of income. The use of a discounted dividend approach allows Mondrian to compare and select the most attractive investment opportunities across developed markets at the market and security level. Mondrian’s methodology is applied consistently to individual securities across all markets and industries. This distinguishes Mondrian from many of its competitors who use different investment criteria in each equity market and sector.</p> <p>Benchmark: MSCI EAFE Small Cap Index</p>	<p>Assets Under Management: 12/31/2016: \$145 Million</p>

Concerns: None

12/31/2016 Performance

	<u>Last Quarter</u>	<u>1-Year</u>	<u>3-Years Annualized</u>	<u>5-Years Annualized</u>
Mondrian	-6.41%	1.03%	0.24%	8.43%
MSCI EAFE Small Cap Index	-2.86%	2.18%	2.10%	10.56%

March 3, 2017



Representing Mondrian:

AIDAN NICHOLSON
SENIOR PORTFOLIO MANAGER
MONDRIAN INVESTMENT PARTNERS LIMITED

E. TODD RITTENHOUSE
SENIOR VICE PRESIDENT, CLIENT SERVICES
MONDRIAN INVESTMENT PARTNERS (U.S.), INC.

P R E S E N T A T I O N T O :

ALASKA RETIREMENT MANAGEMENT BOARD

I N T E R N A T I O N A L S M A L L C A P
E Q U I T Y P O R T F O L I O

A G E N D A

- 1 **ORGANIZATION**
- 2 **INVESTMENT PHILOSOPHY**
- 3 **IMPLEMENTATION**
- 4 **PERFORMANCE**
- 5 **PORTFOLIO**
- 6 **WHY MONDRIAN?**

ANY OTHER BUSINESS

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Philadelphia, PA 19103
Telephone (215) 825-4500

Mondrian Investment Partners Limited is authorised
and regulated by the Financial Conduct Authority
www.mondrian.com

BIOGRAPHIES

MONDRIAN INVESTMENT PARTNERS

Aidan Nicholson, CFA

SENIOR PORTFOLIO MANAGER

MONDRIAN INVESTMENT PARTNERS LIMITED

LONDON

Mr. Nicholson graduated from Pembroke College, Oxford with a Masters in Engineering, Economics & Management. He started his career at Cazenove & Co. in the UK Smaller Companies Team, before moving to Mondrian in 2003 to work on the International Small Capitalisation Team. Mr. Nicholson is a CFA Charterholder and a member of the CFA Institute and the CFA Society of the UK.

E. Todd Rittenhouse

SENIOR VICE PRESIDENT, CLIENT SERVICES

MONDRIAN INVESTMENT PARTNERS (U.S.), INC.

PHILADELPHIA

Mr. Rittenhouse is a graduate of LaSalle University where he earned a Bachelor of Science degree in Business Administration. He worked at Mondrian's former affiliate from 1992 to 1999, where he was a Vice President in the Client Services Group. Prior to joining Mondrian, he was a Partner in the Client Services Group at Chartwell Investment Partners, where he worked for eight years. In his present position, Mr. Rittenhouse is responsible for client service, consultant relations, and marketing.

Organization



OUR ORGANIZATION

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

A SUCCESSFUL, WELL-MANAGED COMPANY

- Founded in 1990
- Over 25 years of stable, consistent leadership
- Approximately US\$59 billion under management

AN INDEPENDENT, EMPLOYEE-OWNED COMPANY

- Equity ownership plan designed to attract, retain and motivate highly skilled people
- Mondrian is employee owned
- Approximately 80 employees are partners today, up from 60 in 2004

A TIME-TESTED INVESTMENT PHILOSOPHY AND PROCESS

- All products utilize an income-oriented value discipline
- Consistently applied since the company's founding in 1990
- In-depth global fundamental research

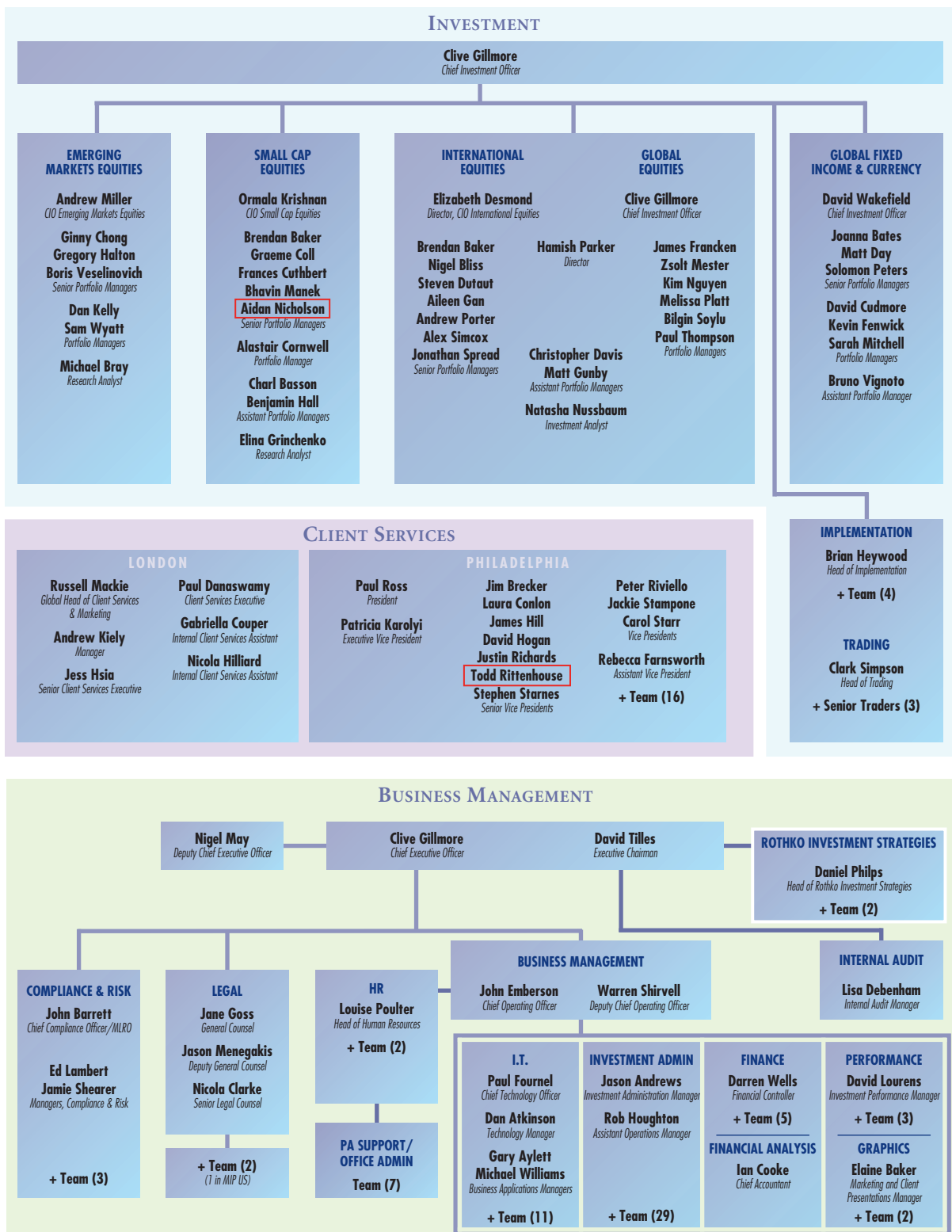
A WELL-RESOURCED TEAM

- Highly experienced team of 57 investment professionals in London
- Low turnover of professional staff
- Strong culture of client service and support

ORGANIZATION

JANUARY 2017

MONDRIAN INVESTMENT PARTNERS



This chart is designed to indicate the staffing resources and management structure at Mondrian Investment Partners Limited and Mondrian Investment Partners (U.S.), Inc. The chart does not attempt to show all functions nor reporting and delegation lines, details of which are maintained in separate records. Please note some people may appear on this chart more than once, reflecting various responsibilities.

REPRESENTATIVE CLIENT LIST

NORTH AMERICA

MONDRIAN INVESTMENT PARTNERS

GOVERNMENT AND LABOR

Alameda County Employees' Retirement Association
 Alaska Permanent Fund Corporation
 Baltimore County Employees' Retirement System
 California State Teachers' Retirement System (CalSTRS)
 Carpenters Trusts of Western Washington
 City of Austin Employees' Retirement System
 City of Baltimore Employees' Retirement System
 City of Charlotte
 City of Cincinnati Retirement System
 City of Hartford Municipal Employees' Retirement Fund
 City of Phoenix Employees' Retirement System
 Colorado Public Employee's Retirement Association
 Cook County Annuity & Benefit Funds
 El Paso Firemen & Policemen's Pension Fund
 ERFC (Fairfax County)
 Florida State Board of Administration
 Fresno County Employees Retirement Association
 Georgia Division of Investment Services
 Howard County Government
 IATSE National Pension Fund
 Idaho Public Employee Retirement System
 Illinois Municipal Retirement Fund
 Inter-Local Pension Fund
 International Union of Painters and Allied Trades
 Iron Workers District Council of New England Pension Fund
 Kent County Employees Retirement System
 Los Angeles County Metropolitan Transportation Authority
 Louisiana State Employees' Retirement System
 MassPRIM
 Mendocino County Employees Retirement Association
 Municipal Fire and Police Retirement System of Iowa
 National Grid Investment Management
 New York City Deferred Compensation Plan
 New York State Common Retirement Fund
 Oklahoma Law Enforcement Retirement System
 Oklahoma Police Pension & Retirement System
 Oklahoma Public Employees Retirement System
 Oklahoma State Regents for Higher Education
 Ontario Power Generation Inc.
 Ontario Public Service Employees Union
 Orange County Retirement System

Parochial Employees' Retirement System of Louisiana
 Prince George's County Pension System
 Public Employees' Retirement System of Mississippi
 Public School Retirement System of the City of St. Louis
 Pueblo County Employees Retirement System
 Sacramento County Employees' Retirement System
 San Bernardino County Employees' Retirement Association
 San Francisco City and County Retirement System
 San Mateo County E.R.A.
 South Carolina Retirement Systems
 Southern California UFCW
 St. Louis County, Missouri
 State Universities Retirement System
 Teachers' Retirement System of the State of Illinois
 The North Central States Regional Council of Carpenters
 Pension Fund
 UT-Battelle
 Vermont State Treasurer's Office
 Washington State Investment Board

INSURANCE

ALAS Investment Services Limited
 Ascension Investment Management
 CIT Group Inc.
 Highmark Health
 Nuclear Electric Insurance Limited
 State Auto Insurance Companies

CORPORATIONS

A.O. Smith Corporation
 Alfred I. duPont Testamentary Trust
 American College of Physicians
 American Hospital Association
 Aon Hewitt Group Trust
 Ascension Investment Management
 Ash Grove Cement Company
 Axel Johnson, Inc.
 Bank of America Corporation
 Banner Health System
 Blue Cross & Blue Shield of Massachusetts, Inc.
 Boys Town

Care New England
 Central Michigan University
 Children's Hospital Los Angeles
 ConAgra Foods, Inc.
 Cooperative Banks Employees Retirement Association
 CSX Corporation, Inc.
 Dartmouth-Hitchcock Medical Center
 Edgewell Personal Care Company
 Energizer Holdings, Inc.
 Eversource Energy
 Farmers Group, Inc.
 Group Health Cooperative
 Health Care Service Corporation
 Henry Ford Health Systems
 Herbert J. Thomas Memorial Hospital Association
 Honeywell International Inc.
 Huntington Ingalls Industries, Inc.
 International Paper Company
 John T. Mather Memorial Hospital
 Liberty Mutual Group, Inc.
 Martin's Point Health Care, Inc.
 Merck & Co., Inc.
 Mercy Health
 Ministers and Missionaries Benefit Board
 National Grid Investment Management
 Novant Health, Inc.
 OhioHealth
 Orlando Health, Inc.
 Parkland Health & Hospital System
 Pfizer Inc.
 Pinnacle Health System
 Renown Health
 Rotary International
 Sappi Fine Paper North America
 Savings Banks Employees Retirement Association
 SECURA Insurance Companies
 Sisters of Mercy Health System
 Southern California Edison
 Southern Company
 Springpoint Senior Living, Inc.

This representative client list includes all separately managed accounts and investors in Mondrian's commingled vehicles not subject to confidentiality limitations, where the clients are based in the United States and Canada. It is therefore not a complete list of all Mondrian's clients. It is not known whether the listed clients approve or disapprove of Mondrian or the services provided.

REPRESENTATIVE CLIENT LIST

NORTH AMERICA

MONDRIAN INVESTMENT PARTNERS

CORPORATIONS (CONT.)

State Auto Insurance Companies
The Dow Chemical Company
The Green-Wood Cemetery
TI Group Automotive Systems
Tribune Media Company
Tufts Associated Health Maintenance Organization, Inc.
United Church of Christ Pension Boards
University of Maine System
University of Ottawa
Valley Children's Hospital
Verity Health System
Verizon Investment Management Corp.
Wal-Mart Stores, Inc.
Wells Fargo & Company Cash Balance Plan

ENDOWMENTS AND FOUNDATIONS

Alfred I. duPont Testamentary Trust
Alverno College
Archdiocese of Los Angeles
Augustana College
Baylor Oral Health Foundation
Berkshire Taconic Community Foundation
Boys Town
Central Michigan University
Community Foundation for Southeast Michigan
Community Foundation of Greater Des Moines
Community Foundation of the Holland/Zeeland Area
Cornell University
Donald B. & Dorothy L. Stabler Foundation
Furman University
General Conference Corporation of Seventh-day Adventists
George I. Alden Trust
Gonzaga University
Goucher College
Greater Worcester Community Foundation, Inc.
Henry Ford Health Systems
Indianapolis Symphony Orchestra
Kemper & Ethel Marley Foundation
Lenoir-Rhyne University
Marin Community Foundation

Missouri Botanical Garden
Northwest Area Foundation
Open Space Institute Land Trust, Inc.
Richard King Mellon Foundation
Riverside Healthcare Foundation
Roswell Park Alliance Foundation
Rotary International
San Diego Foundation
Savannah College of Art & Design, Inc.
Siena College
Simpson College
Springfield Foundation
St. Louis Symphony Orchestra
Sunnyside Foundation, Inc.
Tabor Academy
Texas Tech University System
The Annie E. Casey Foundation
The Batchelor Foundation, Inc.
The Boston Foundation
The Butler Family Foundation
The Carle Foundation
The Catholic University of America
The Community Foundation for Greater New Haven
The Hyams Foundation, Inc.
The Riverside Church
The Samuel Roberts Noble Foundation, Inc.
The Seattle Foundation
University of Kentucky
University of Maine System
University of Ottawa
University of Vermont
UNLV Foundation
Washington State University Foundation
Wesleyan College
Western Illinois University
William Caspar Graustein Memorial Fund
William H. Miner Foundation
William Penn Foundation
Winthrop Rockefeller Foundation
World Learning

SUB-ADVISORY

Bessemer Trust
Brown Brothers Harriman
Charles Schwab Investment Management
Delaware Investments
Olive Street Investment Advisers, LLC
(an affiliate of Edward Jones)
Lincoln National Life Insurance Co.
MD Financial Management Inc.
Mercer Investment Consulting
The Investment Fund for Foundations
UBS Global Asset Management (Americas) Inc.

This representative client list includes all separately managed accounts and investors in Mondrian's commingled vehicles not subject to confidentiality limitations, where the clients are based in the United States and Canada. It is therefore not a complete list of all Mondrian's clients. It is not known whether the listed clients approve or disapprove of Mondrian or the services provided.

Updated: January 2017

BUSINESS PROFILE

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

DIVERSE INVESTMENT PRODUCTS

Developed Markets Equity

- *International Equity Ex-US*
- *International Equity ESG Ex-US*
- *Focused International Equity Ex-US*
- *Global Equity*

All Country World Equity

- *All Country World Equity Ex-US*
- *Focused All Country World Equity Ex-US*
- *All Country World Equity*

Emerging Markets Equity

- *Emerging Markets Equity*
- *Focused Emerging Markets Equity*
- *Emerging Markets Wealth*

Small Cap Equity

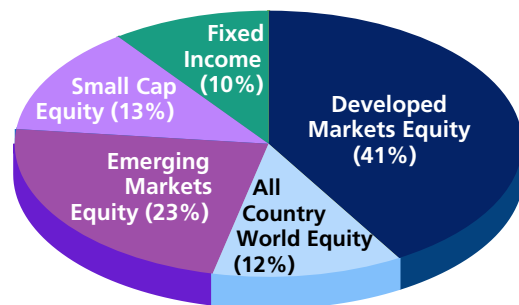
- *International Small Cap Equity Ex-US*
- *Emerging Markets Small Cap Equity*
- *US Small Cap Equity*

Fixed Income

- *Global Fixed Income (Sovereign and Aggregate)*
- *International Fixed Income Ex-US*
- *Emerging Markets Debt (Local, Hard and Blended currency)*
- *Global Debt Opportunities*
- *Regional Fixed Income*
- *Global Inflation-Linked*

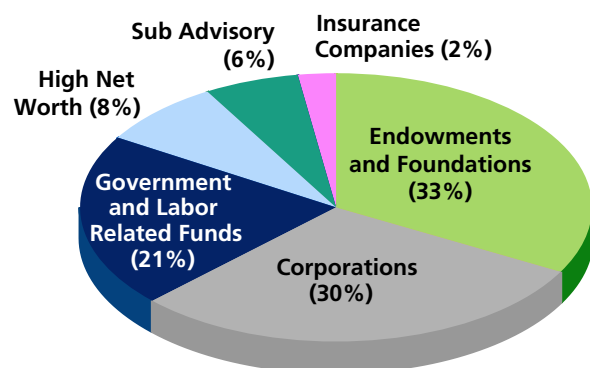
TYPE OF ASSETS MANAGED

(Assets Under Management)



TYPE OF CLIENTS SERVED

(Number of Client Relationships)



A number of vehicles are available in each of the above product areas, including separate accounts, limited partnerships, registered mutual funds and UCITS. Please refer to additional information at the end of the book regarding available vehicles and minimum account sizes.

INTERNATIONAL SMALL CAP ORGANIZATION CHART

JANUARY 2017

MONDRIAN INVESTMENT PARTNERS



Investment Philosophy



EQUITY INVESTMENT PHILOSOPHY

MONDRIAN INVESTMENT PARTNERS

Mondrian Investment Partners is a value-oriented defensive manager.

We invest in stocks where rigorous dividend discount analysis isolates value in terms of the long-term flow of dividends. Dividend yield and future real growth play a central role in our decision making process and over time the dividend component is expected to be a meaningful portion of expected total return.

POTENTIAL BENEFITS

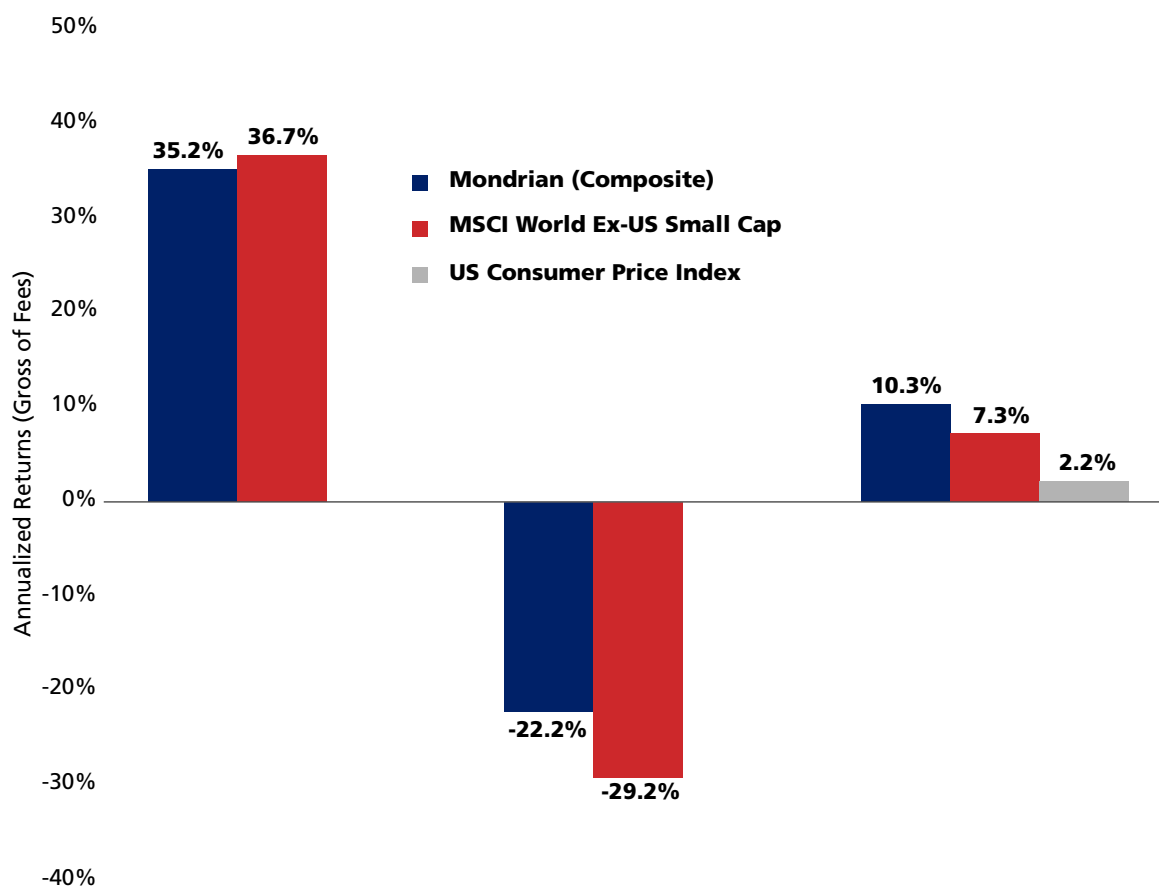
- An approach that focuses on providing a **RATE OF RETURN** meaningfully **GREATER THAN** the client's domestic rate of **INFLATION**.
- Client portfolios that seek to **PRESERVE CAPITAL** during protracted global market declines.
- Portfolio performance that has been **LESS VOLATILE*** than the International Small Cap Benchmarks and the performance of most other international small-cap managers.

*Please refer to the Standard Deviation chart on page 2.5.

DEFENSIVE CHARACTERISTICS

MONDRIAN INTERNATIONAL SMALL CAP EQUITY COMPOSITE
SINCE INCEPTION: JANUARY 1, 1998 TO DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS



	BULL MARKET	BEAR MARKET	TOTAL
NUMBER OF QUARTERS	48	28	76
MONDRIAN (COMPOSITE) AGGREGATE PERFORMANCE			
	3,632.6%	-82.7%	546.3%
MSCI WORLD EX-US SMALL CAP AGGREGATE PERFORMANCE			
	4,171.8%	-91.1%	279.5%

Source: Mondrian Investment Partners and MSCI

Please see the composite definition provided on the composite disclosure page in the appendix. Generally, a composite includes all accounts managed by Mondrian to the same investment strategy.

A Bull Market quarter is defined as one in which the benchmark showed a positive US dollar return, and a Bear Market quarter when the benchmark showed a negative US dollar return.

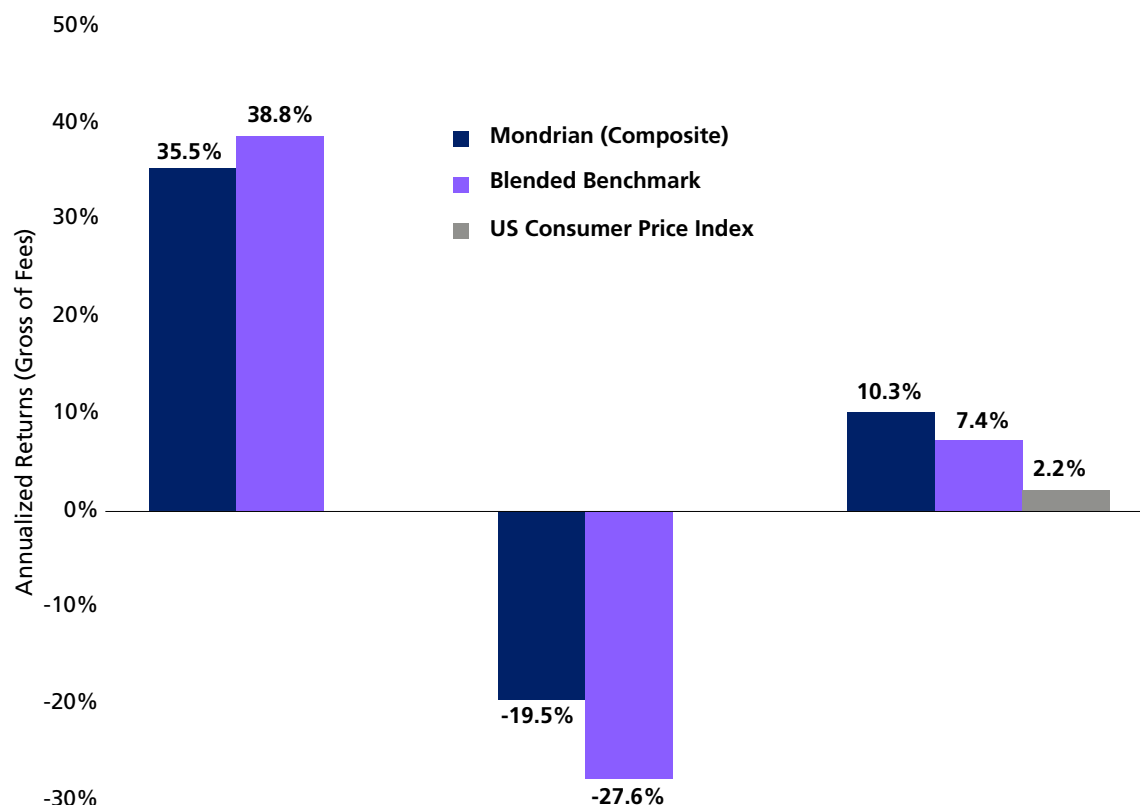
The returns presented on this page are presented gross of advisory fees and other expenses associated with managing an investment advisory account. Actual returns will be reduced by such fees and expenses. Please carefully review the disclosure and notes concerning performance calculation and GIPS compliance in the appendix. These provide more information concerning gross performance results including an illustration of the negative effect of advisory fees on performance. Past performance is not a guarantee of future results. Supplemental Information complements the Mondrian International Small Cap Composite disclosure in the appendix.

DEFENSIVE CHARACTERISTICS

MONDRIAN INTERNATIONAL SMALL CAP EQUITY COMPOSITE

SINCE INCEPTION: JANUARY 1, 1998 TO DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS



	BULL MARKET	BEAR MARKET	TOTAL
NUMBER OF QUARTERS	46	30	76
MONDRIAN (COMPOSITE) AGGREGATE PERFORMANCE	3,192.6%	-80.4%	546.3%
BLENDED BENCHMARK AGGREGATE PERFORMANCE	4,238.8%	-91.1%	285.1%

Blended Benchmark: For the period January 1, 1998 to January 31, 2001, the benchmark shown is the MSCI World ex US Small Cap. From February 1, 2001 to present, the benchmark is MSCI EAFE Small Cap (net dividends reinvested).

Source: Mondrian Investment Partners and MSCI

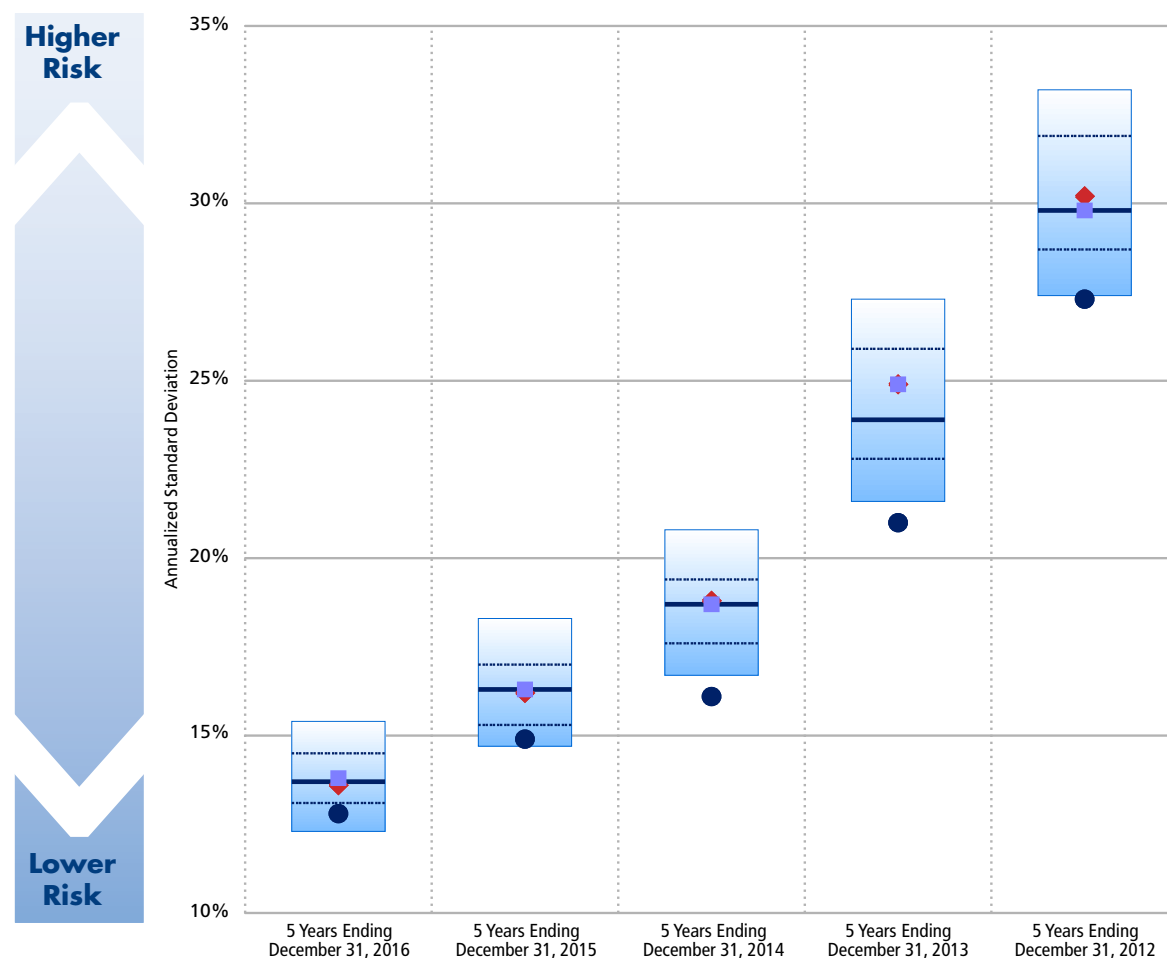
A Bull Market quarter is defined as one in which the benchmark showed a positive US dollar return, and a Bear Market quarter when the benchmark showed a negative US dollar return.

The returns presented on this page are presented gross of advisory fees and other expenses associated with managing an investment advisory account. Actual returns will be reduced by such fees and expenses. Please carefully review the disclosure in the appendix for more information concerning these gross performance results including an illustration of the negative effect of advisory fees on performance. Past performance is not a guarantee of future results. Supplemental Information complements the Mondrian International Small Cap Composite disclosure in the appendix.

STANDARD DEVIATION INTERNATIONAL EQUITY SMALL CAP UNIVERSE

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS



10th Percentile	15.4	18.3	20.8	27.3	33.2
25th Percentile	14.5	17.0	19.4	25.9	31.9
Median	13.7	16.3	18.7	23.9	29.8
75th Percentile	13.1	15.3	17.6	22.8	28.7
90th Percentile	12.3	14.7	16.7	21.6	27.4
Member Count	61	63	43	42	41

Annualized Standard Deviation:

Mondrian (Composite) ●	12.8	14.9	16.1	21.0	27.3
MSCI World Ex-US Small Cap ◆	13.6	16.2	18.8	24.9	30.2
MSCI EAFE Small Cap ■	13.8	16.3	18.7	24.9	29.8

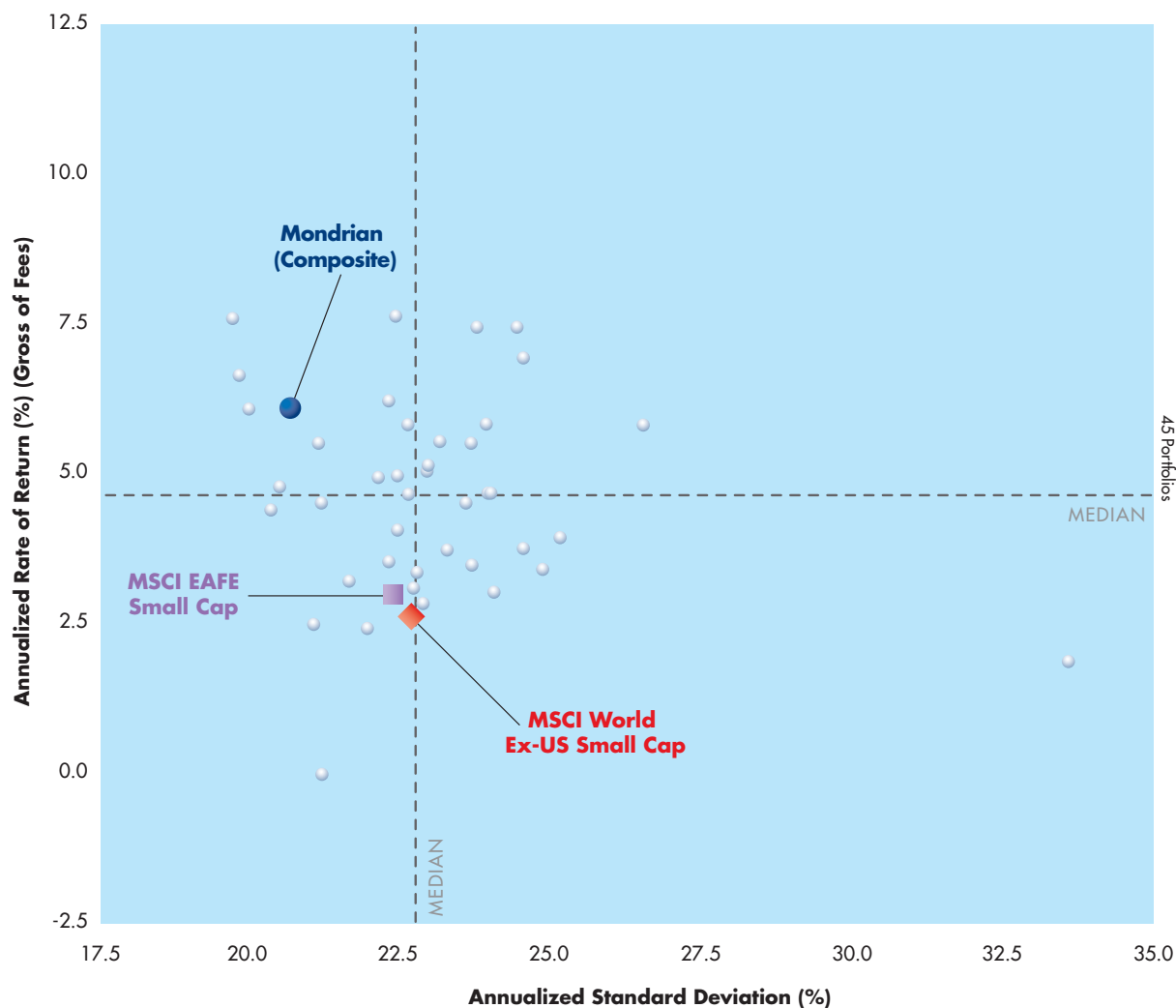
Source: Mondrian Investment Partners and Recognized Financial and Statistical Reporting Service.

The standard deviation of returns is computed based on returns gross advisory fees and other expenses associated with managing an investment advisory account. Actual returns will be reduced by such fees and expenses. Please carefully review the disclosure in the appendix for more information concerning these gross performance results including an illustration of the negative effect of advisory fees on performance. Past performance is not a guarantee of future results. Supplemental Information complements the Mondrian International Small Cap Composite disclosure in the appendix. The member count for the International Equity Small Cap universe was determined by counting the flagship representative institutional tax-exempt accounts for this strategy with both a minimum account size of \$100 million and a two year track record.

RISK/REWARD COMPARISON INTERNATIONAL EQUITY SMALL CAP UNIVERSE

TEN YEARS ENDED DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS



Source: Mondrian Investment Partners and Recognized Financial and Statistical Reporting Service.

The standard deviation of returns is computed based on returns gross advisory fees and other expenses associated with managing an investment advisory account. Actual returns will be reduced by such fees and expenses. Please carefully review the disclosure in the appendix for more information concerning these gross performance results including an illustration of the negative effect of advisory fees on performance. Past performance is not a guarantee of future results. Supplemental Information complements the Mondrian International Small Cap Composite disclosure in the appendix. The member count for the International Equity Small Cap universe was determined by counting the flagship representative institutional tax-exempt accounts for this strategy with both a minimum account size of \$100 million and a two year track record.

INVESTMENT PROCESS

MONDRIAN INVESTMENT PARTNERS

STOCKS, MARKETS AND CURRENCIES

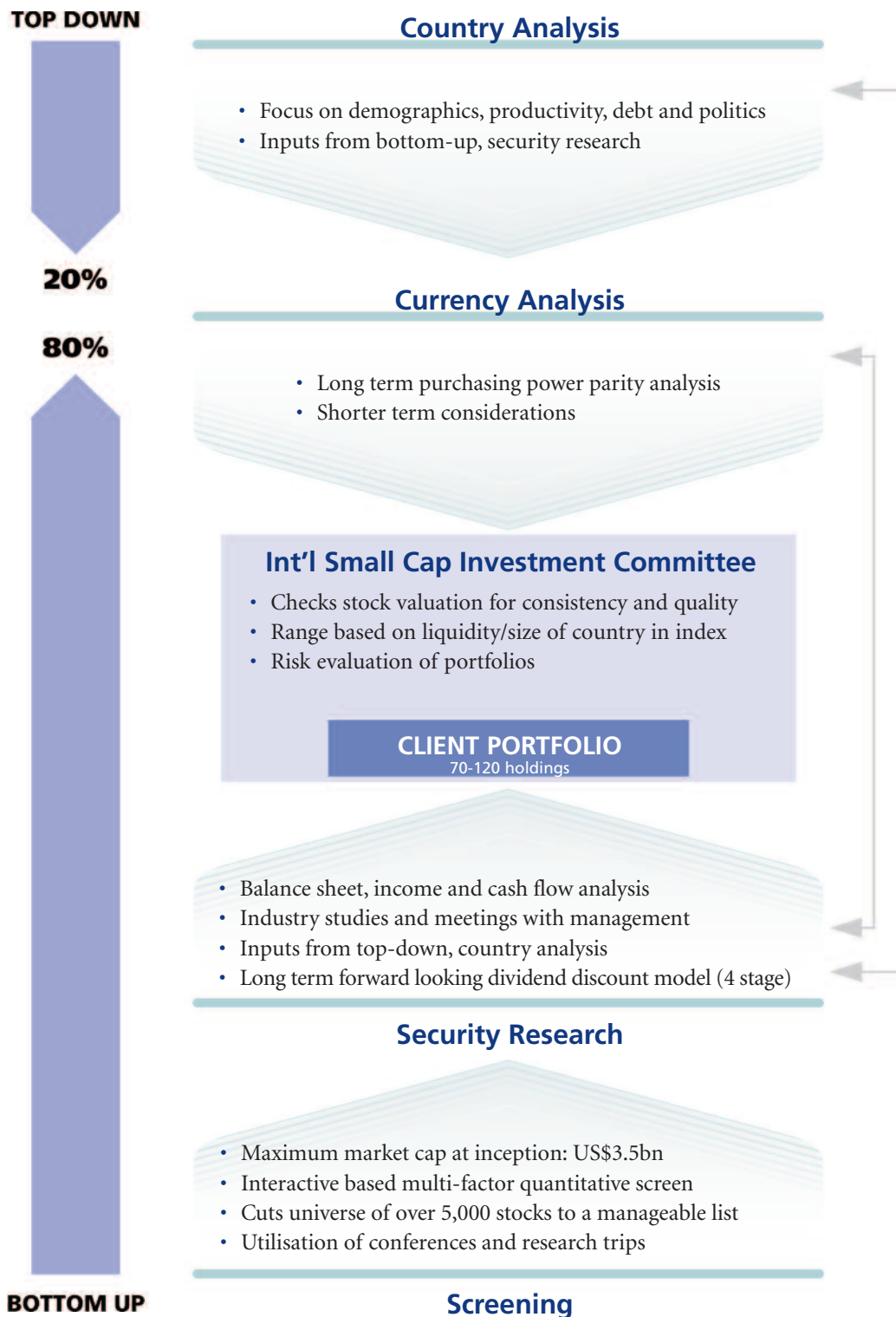
- A **VALUE-ORIENTED DIVIDEND DISCOUNT ANALYSIS** at both the individual security and market level isolates value across geographic and industrial borders in a unified manner.
- A long-term oriented **PURCHASING POWER PARITY APPROACH**, supplemented by shorter-term probability assessment.
- Fundamental research is strongly emphasized. An extensive program of **COMPANY AND MARKET VISITS** enhances initial **QUALITATIVE AND QUANTITATIVE DESK RESEARCH**, both prior to the purchase of a stock and after its inclusion in the portfolio.

Implementation



THE INTERNATIONAL SMALL CAP EQUITY FRAMEWORK FOR DECISION MAKING

MONDRIAN INVESTMENT PARTNERS



CURRENCY ANALYSIS

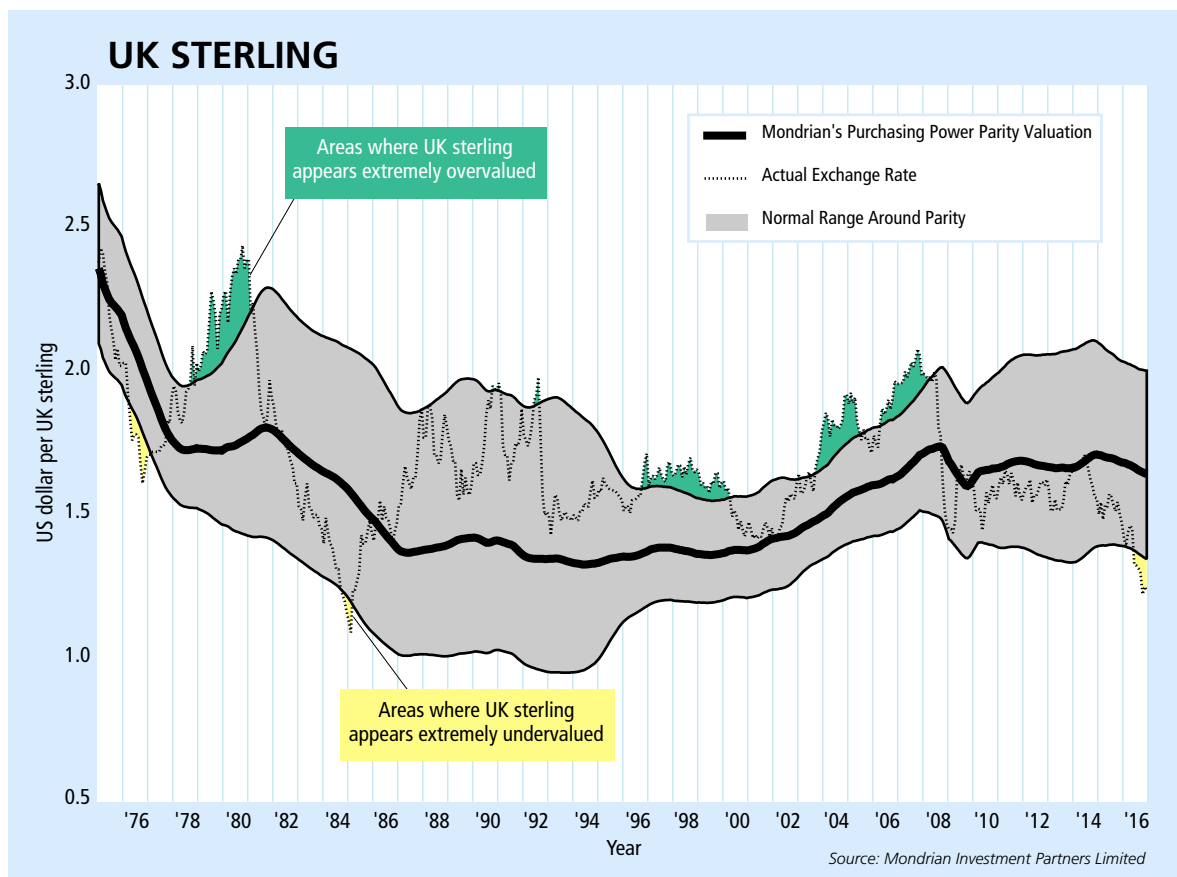
A PURCHASING POWER PARITY APPROACH

MONDRIAN INVESTMENT PARTNERS

- A long-term oriented purchasing power parity approach supplemented by shorter term probability assessment is the cornerstone of on-going currency analysis.

MONDRIAN'S CURRENCY APPROACH

A DEFENSIVE STRATEGY

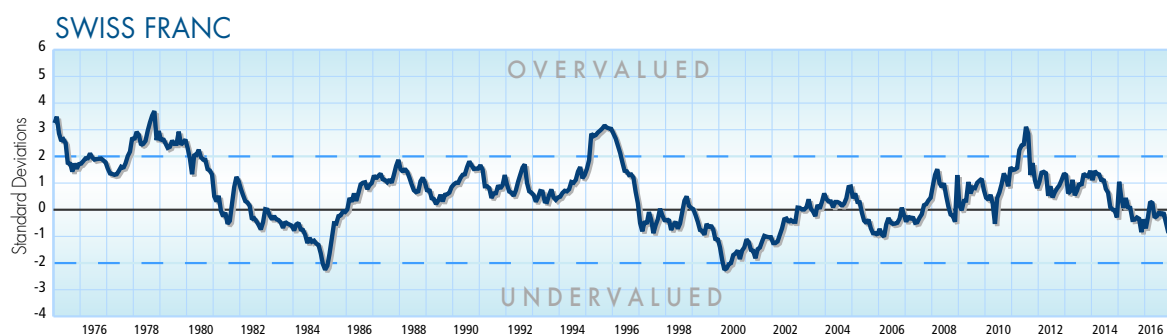


Purchasing power parity (PPP) is a theory which states that exchange rates between currencies are in equilibrium when their purchasing power is the same in each of the two countries. In the chart above, the black solid line represents our calculation of the fair value of an exchange rate. The dotted line is the actual exchange rate and the gray area represents our calculation of the normal trading range.

PURCHASING POWER PARITY VALUATIONS VERSUS US DOLLAR

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

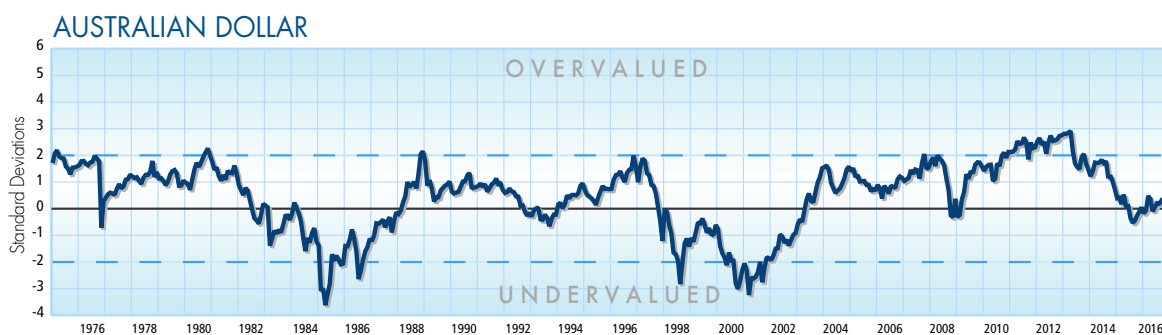
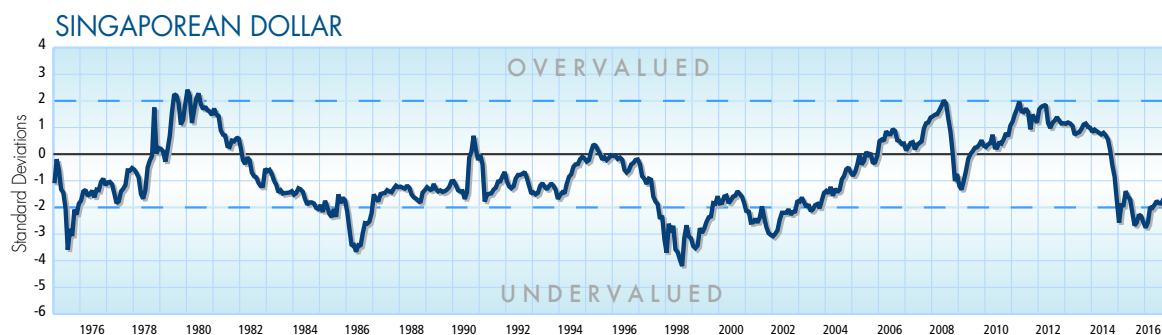


Source: Mondrian Investment Partners

PURCHASING POWER PARITY VALUATIONS VERSUS US DOLLAR

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS



SELL DISCIPLINE

MONDRIAN INVESTMENT PARTNERS

STOCKS, MARKETS AND CURRENCIES

- Price appreciation leading to significant overvaluation against a predetermined value level.
- A change in the fundamentals which adversely affects ongoing appraisal of value.
- More attractive alternatives.
- Market capitalization and size of holding significantly in excess of targeted ceiling.

Performance



PERFORMANCE

ALASKA RETIREMENT MANAGEMENT BOARD

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

Period	Portfolio %	MSCI World Ex-US Small Cap %	MSCI EAFE Small Cap %
Oct. 1 - Dec. 31, 2010	9.8	12.9	11.8
2011	-8.0	-15.8	-15.9
2012	25.8	17.5	20.0
2013	18.4	25.6	29.3
2014	-4.0	-5.3	-4.9
2015	3.8	5.5	9.6
January	-5.9	-7.6	-7.9
February	0.7	0.5	-0.1
March	8.4	8.3	8.0
Quarter 1, 2016	2.8	0.6	-0.6
April	0.0	3.2	2.3
May	0.0	0.1	0.5
June	-2.1	-4.4	-5.3
Quarter 2, 2016	-2.1	-1.3	-2.6
July	4.9	5.9	6.1
August	1.1	-0.8	-0.6
September	1.2	2.8	3.0
Quarter 3, 2016	7.4	8.0	8.6
October	-4.8	-3.0	-2.8
November	-3.1	-2.5	-2.8
December	1.5	2.8	2.9
Quarter 4, 2016	-6.4	-2.7	-2.9
2016	1.0	4.3	2.2
3 Years (annualized)	0.2	1.4	2.1
5 Years (annualized)	8.4	9.0	10.6
Since Inception October 1, 2010 (cumulative)	51.6	45.9	55.2
Since Inception October 1, 2010 (annualized)	6.9	6.2	7.3

Market Value: US\$144,554,681

Source: Mondrian Investment Partners, MSCI for World Ex-US Small Cap Index and MSCI EAFE Small Cap Index

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INTERNATIONAL SMALL CAP EQUITY COMPOSITE PERFORMANCE

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

Period	Mondrian (Composite) %	MSCI World Ex-US Small Cap %	Relative %
1998	7.2	4.3	2.7
1999	25.5	18.4	6.0
2000	-1.2	-8.8	8.3
2001	-4.8	-10.7	6.6
2002	-8.6	-7.4	-1.3
2003	51.4	61.8	-6.5
2004	28.9	29.4	-0.4
2005	15.6	25.0	-7.6
2006	37.2	19.5	14.8
2007	12.6	3.3	9.0
2008	-43.3	-48.0	9.1
2009	57.8	50.8	4.6
2010	31.0	24.5	5.2
2011	-8.0	-15.8	9.2
2012	25.7	17.5	7.0
2013	18.2	25.6	-5.8
2014	-4.2	-5.3	1.2
2015	3.6	5.5	-1.8
January	-5.9	-7.6	1.8
February	0.7	0.5	0.2
March	8.4	8.3	0.1
Quarter 1, 2016	2.7	0.6	2.1
April	-0.1	3.2	-3.1
May	0.0	0.1	-0.1
June	-2.2	-4.4	2.3
Quarter 2, 2016	-2.2	-1.3	-1.0
July	5.0	5.9	-0.9
August	1.2	-0.8	2.0
September	1.2	2.8	-1.6
Quarter 3, 2016	7.5	8.0	-0.5
October	-4.8	-3.0	-1.9
November	-3.1	-2.5	-0.7
December	1.5	2.8	-1.2
Quarter 4, 2016	-6.4	-2.7	-3.8
2016	1.0	4.3	-3.2
3 Years (annualized)	0.1	1.4	-1.3
5 Years (annualized)	8.3	9.0	-0.6
7 Years (annualized)	8.7	7.0	1.6
10 Years (annualized)	6.1	2.7	3.3
15 Years (annualized)	11.5	9.3	2.0
Composite Inception January 1, 1998 (cumulative)	546.3	279.5	70.3
Composite Inception January 1, 1998 (annualized)	10.3	7.3	2.8

Source: Mondrian Investment Partners, MSCI for World Ex-US Small Cap Index

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SMALL CAP EQUITY MARKET RETURNS

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

	QUARTER 4, 2016			2016		
	Local Market Return -%	Currency Change vs. US\$ -%	US\$ Return -%	Local Market Return -%	Currency Change vs. US\$ -%	US\$ Return -%
NORTH AMERICA	6.4	-0.1	6.3	19.5	0.2	19.7
Canada	0.3	-2.0	-1.7	26.4	3.6	30.9
USA	6.8	0.0	6.8	19.2	0.0	19.2
ASIA PACIFIC	8.8	-10.8	-2.9	5.2	2.2	7.5
Australia	-0.4	-5.4	-5.7	16.2	-0.5	15.6
Hong Kong	-3.6	0.0	-3.6	-7.9	-0.0	-7.9
Japan	13.2	-13.2	-1.7	4.3	3.1	7.6
New Zealand	-7.5	-4.1	-11.3	3.4	1.9	5.4
Singapore	-2.8	-5.6	-8.2	7.3	-1.8	5.4
EUROPE & MIDDLE EAST	2.8	-5.5	-2.8	6.2	-7.4	-1.7
Austria	3.3	-6.1	-3.1	5.8	-2.9	2.7
Belgium	3.5	-6.1	-2.8	5.1	-2.9	2.1
Denmark	2.0	-6.0	-4.1	5.7	-2.5	3.0
Finland	3.6	-6.1	-2.8	26.1	-2.9	22.5
France	5.5	-6.1	-1.0	10.4	-2.9	7.2
Germany	0.6	-6.1	-5.6	4.2	-2.9	1.1
Ireland	3.4	-6.1	-3.0	0.5	-2.9	-2.5
Israel	4.9	-2.0	2.8	14.3	1.0	15.5
Italy	9.5	-6.1	2.8	-11.5	-2.9	-14.0
Netherlands	5.3	-5.7	-0.6	4.8	-2.5	2.1
Norway	13.7	-7.1	5.6	22.3	2.8	25.8
Portugal	5.7	-6.1	-0.8	-22.2	-2.9	-24.5
Spain	0.8	-6.1	-5.4	1.9	-2.9	-1.1
Sweden	-0.7	-5.7	-6.4	7.6	-7.2	-0.2
Switzerland	2.6	-4.6	-2.1	11.1	-1.5	9.4
United Kingdom	1.5	-4.9	-3.5	6.8	-16.2	-10.5
WORLD EX US SC	5.0	-7.4	-2.7	7.4	-2.9	4.3

Source: MSCI

PERFORMANCE SUMMARY – QUARTER 4, 2016

ALASKA RETIREMENT MANAGEMENT BOARD

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

PERFORMANCE ATTRIBUTION %

	RELATIVE CURRENCY CONTRIBUTION	RELATIVE MARKET CONTRIBUTION	STOCK CONTRIBUTION	RELATIVE RETURN
MSCI WORLD EX-US SC	+1.8	-3.2	-2.4	-3.8
MSCI EAFE SC	+2.4	-3.6	-2.5	-3.7

POSITIVE

NEGATIVE

STOCK CONTRIBUTION

- | | |
|-------------------------------|---|
| ● Germany
MTU Aero Engines | ● UK
Laird |
| ● UK
Victrex
Diploma | ● New Zealand
Auckland International Airport |
| ● France
LISI | ● Sweden
Eltel |
| | ● Germany
Fielmann |

CURRENCY CONTRIBUTION

- Underweight Japanese yen
- Overweight Hong Kong dollar

MARKET CONTRIBUTION

- | | |
|----------------------|--------------------------|
| ● Underweight Canada | ● Underweight Japan |
| ● Underweight Spain | ● Overweight New Zealand |

Source: Mondrian Investment Partners, MSCI for World Ex-US Small Cap Index, and MSCI EAFE Small Cap Index

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PERFORMANCE SUMMARY – 2016

ALASKA RETIREMENT MANAGEMENT BOARD

MONDRIAN INVESTMENT PARTNERS

PERFORMANCE ATTRIBUTION %

	RELATIVE CURRENCY CONTRIBUTION	RELATIVE MARKET CONTRIBUTION	STOCK CONTRIBUTION	RELATIVE RETURN
MSCI WORLD EX-US SC	-1.6	-0.3	-1.2	-3.1
MSCI EAFE SC	-1.0	+1.2	-1.3	-1.1

P O S I T I V E

N E G A T I V E

STOCK CONTRIBUTION

- | | |
|---|---|
| <ul style="list-style-type: none"> ● Canada
CAE ● Hong Kong/China
Sunny Optical ● Australia
Pact ● Singapore
SATS | <ul style="list-style-type: none"> ● UK
Laird Group
Interserve
Greene King
Croda |
|---|---|

CURRENCY CONTRIBUTION

- | | |
|--|--|
| <ul style="list-style-type: none"> ● Exposure to New Zealand dollar | <ul style="list-style-type: none"> ● Underweight Japanese yen ● Overweight UK sterling |
|--|--|

MARKET CONTRIBUTION

- | | |
|--|--|
| <ul style="list-style-type: none"> ● Underweight Italy ● Underweight Japan | <ul style="list-style-type: none"> ● Underweight Canada ● Overweight New Zealand |
|--|--|

Source: Mondrian Investment Partners, MSCI for World Ex-US Small Cap Index, and MSCI EAFE Small Cap Index

The returns presented on this page are presented gross of advisory fees and other expenses associated with managing an investment advisory account. Actual returns will be reduced by such fees and expenses. Please carefully review the disclosure for more information concerning these gross performance results including an illustration of the negative effect of advisory fees on performance. Past performance is not a guarantee of future results.

Portfolio



COUNTRY ALLOCATION

ALASKA RETIREMENT MANAGEMENT BOARD

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

	1	2	3	4	5	6
	MIN/MAX ALLOCATION (%)	PORTFOLIO ALLOCATION (%)	MSCI WORLD EX-US SMALL CAP (%)	MSCI EAFE SMALL CAP (%)	OVER/ UNDERWEIGHT	CURRENCY HEDGE
North America		9.1	9.8	—	-0.7	
Canada	0 – 15	9.1	9.8	—	-0.7	
Asia Pacific		42.7	39.3	43.6	3.4	
Australia	0 – 20	10.3	6.1	6.7	4.2	
Hong Kong/China	0 – 20	5.5	2.2	2.4	3.3	
Japan	0 – 40	12.2	28.6	31.7	-16.3	
New Zealand	0 – 10	6.0	1.0	1.1	5.0	✓
Singapore	0 – 20	8.8	1.5	1.7	7.2	
Europe & Middle East		46.7	50.9	56.4	-4.2	
Denmark	0 – 15	1.9	1.3	1.5	0.6	
France	0 – 25	6.9	3.8	4.2	3.1	
Germany	0 – 25	10.3	5.6	6.2	4.7	
Ireland	0 – 15	1.9	0.9	1.0	1.0	
Italy	0 – 15	—	3.4	3.8	-3.4	
Netherlands	0 – 20	1.9	1.9	2.1	0.1	
Spain	0 – 15	—	2.3	2.5	-2.3	
Sweden	0 – 15	4.7	4.7	5.2	0.1	
Switzerland	0 – 15	2.9	4.1	4.6	-1.2	
United Kingdom	0 – 45	16.0	15.9	17.6	0.2	

1 A minimum/maximum country allocation policy seeks to allow broad flexibility while guarding against over-or under concentration relative to the Index. If the governing documents for the account contain min/max guidelines, these guidelines are reflected above. If the governing documents for the account do not contain min/max guidelines, the min/max allocations above represent Mondrian's current internal policy and can be changed at any time in Mondrian's discretion.

2 Portfolio Allocation

3 MSCI World Ex-US Small Cap Index Weights

4 MSCI EAFE Small Cap Index Weights

5 Over/Underweight to MSCI World Ex-US Small Cap Index Weights

6 Defensive currency hedges are put into place if appropriate and permissible under client objectives.

PORTFOLIO

ALASKA RETIREMENT MANAGEMENT BOARD

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

	INDUSTRY	HOLDINGS (%)		P/E RATIO		DIVIDEND YIELD (%)			
		Portfolio	MSCI World Ex-US SC	MSCI EAFE SC	Portfolio	MSCI World Ex-US SC	Portfolio	MSCI World Ex-US SC	
NORTH AMERICA									
CANADA			9.1	9.8	----	22.8	3.5	2.4	
			9.1	9.8	----	22.8	3.5	2.4	
CAE	Aerospace & Defense	3.4			20.9		1.7		
Innergex Renewable Energy	Ind Power Producers & Energy Traders	0.8			N/A		4.6		
Northview Apartment REIT	Real Estate Invest Trust	1.0			16.0		8.1		
Ritchie Bros	Commercial Services & Supplies	1.1			26.8		2.0		
TransAlta Renewables	Ind Power Producers & Energy Traders	0.8			28.7		6.1		
WSP Global	Construction & Engineering	2.0			29.1		3.4		
ASIA PACIFIC									
AUSTRALIA			42.7 ...	39.3 ...	43.6	18.4	20.2	3.2	2.3
			10.3	6.1	6.7	15.4	23.7	4.5	3.1
Charter Hall Retail REIT	Real Estate Invest Trust	1.8			12.6		6.7		
Costa Group	Food Products	1.4			43.4		2.6		
Inghams	Food Products	0.7			N/A		N/A		
Invocare	Diversified Consumer Services	2.1			23.8		2.8		
Pact	Containers & Packaging	1.7			23.4		3.1		
SCA Property Group REIT	Real Estate Invest Trust	1.9			8.8		5.7		
Spotless	Commercial Services & Supplies	0.6			8.9		8.6		
HONG KONG/CHINA			5.5	2.2	2.4	18.2	21.1	1.6	2.9
ASM Pacific	Semiconductor Equipment & Products	0.6			45.9		1.5		
HKBN	Diversified Telecommunication Services	0.9			33.1		4.7		
Microport	Health Care Equipment & Supplies	0.7			N/A		0.0		
Nesteer Automotive Group	Auto Components	2.2			11.5		1.3		
Sunny Optical	Electronic Equipment & Instruments	1.0			36.3		0.7		
JAPAN			12.2 ...	28.6 ...	31.7	22.8	19.4	1.5	1.8
Ariake	Food Products	1.2			32.2		1.0		
FCC	Auto Components	0.8			24.8		1.9		
Hogy Medical	Health Care Equipment & Supplies	1.5			20.3		1.7		
Miraca	Health Care Providers & Services	1.0			N/A		2.2		
Misumi	Trading Companies & Distributors	1.3			30.8		0.8		
Musashi Seimitsu	Auto Components	1.2			18.7		1.7		
Nifco	Auto Components	2.8			17.1		1.7		
Nihon M&A	Capital Markets	1.2			42.1		0.8		
Resorttrust	Hotels Restaurants & Leisure	1.2			24.0		2.1		
NEW ZEALAND			6.0	1.0	1.1	24.4	15.6	4.3	4.4
Auckland International Airport	Transportation Infrastructure	2.7			28.4		2.8		
Mercury NZ	Electric Utilities	2.4			23.9		5.7		
Sky City Entertainment	Hotels Restaurants & Leisure	0.9			17.6		5.3		
SINGAPORE			8.8	1.5	1.7	15.3	30.4	4.3	5.4
Ascendas REIT	Real Estate Invest Trust	2.0			18.7		5.4		
CapitaLand Mall Trust REIT	Real Estate Invest Trust	1.8			11.1		5.9		
Sarine	Machinery	0.6			N/A		2.8		
SATS	Transportation Infrastructure	2.6			22.8		3.3		
SIA Engineering	Transportation Infrastructure	1.7			11.6		3.6		
EUROPE & MIDDLE EAST									
DENMARK			1.9	1.3	1.5	35.7	19.1	1.3	1.7
Christian Hansen	Chemicals	1.9			35.7		1.3		
FRANCE			6.9	3.8	4.2	21.4	45.3	2.2	1.8
Boiron	Pharmaceuticals	1.2			19.7		1.8		
Ingenico	Electronic Equipment & Instruments	0.8			20.2		1.7		
Korian	Health Care Providers & Services	1.6			52.7		2.2		
LSI	Aerospace & Defense	1.2			15.6		1.3		
Rubis	Gas Utilities	2.1			18.1		3.1		

CONTINUED ON NEXT PAGE

A portion of the portfolio's New Zealand dollar exposure is defensively hedged back into the US dollar.

Source: Mondrian Investment Partners, MSCI for World Ex-US Small Cap Index and MSCI EAFE Small Cap Index

PORTFOLIO

ALASKA RETIREMENT MANAGEMENT BOARD

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

	INDUSTRY	HOLDINGS (%)			P/E RATIO		DIVIDEND YIELD (%)	
		Portfolio	MSCI World Ex-US SC	MSCI EAFE SC	Portfolio	MSCI World Ex-US SC	Portfolio	MSCI World Ex-US SC
GERMANY		10.3	5.6	6.2	23.8	27.6	1.7	1.9
Dürr	Machinery	1.1			15.4		2.4	
Fielmann	Specialty Retail	2.0			32.7		2.8	
MTU Aero Engines	Aerospace & Defense	2.9			20.7		1.5	
NORMA Group	Machinery	0.9			16.4		2.2	
Qiagen	Life Sciences Tools & Services	1.0			55.8		0.0	
Rational	Machinery	0.8			39.6		1.8	
Stabilus	Machinery	1.6			23.0		1.0	
IRELAND		1.9	0.9	1.0	18.9	13.5	0.8	2.1
Glanbia	Food Products	1.9			18.9		0.8	
NETHERLANDS		1.9	1.9	2.1	12.2	11.6	3.0	2.1
Boskalis Westminster	Construction & Engineering	0.5			15.3		4.9	
Refresco Group	Beverages	1.4			11.4		2.4	
SWEDEN		4.7	4.7	5.2	19.4	18.3	2.0	2.1
AAK	Food Products	1.9			26.5		1.3	
AF	Professional Services	2.2			18.8		2.2	
Eltel	Construction & Engineering	0.6			11.0		3.7	
SWITZERLAND		2.9	4.1	4.6	23.7	28.8	2.2	2.5
Belimo	Building Products	0.6			33.6		2.1	
Burckhardt Compression	Machinery	0.9			16.4		3.7	
Dätwyler	Industrial Conglomerates	0.7			24.3		1.6	
u-blox	Semiconductor Equipment & Products	0.8			31.7		1.0	
UNITED KINGDOM		16.0	15.9	17.6	16.8	17.6	2.9	2.6
Croda	Chemicals	2.7			22.1		2.3	
Diploma	Trading Companies & Distributors	1.8			26.6		1.9	
Elementis	Chemicals	0.7			19.4		4.3	
Greene King	Hotels Restaurants & Leisure	0.8			10.0		4.6	
Halma	Electronic Equipment & Instruments	1.3			26.2		1.5	
Interserve	Construction & Engineering	1.0			5.0		7.2	
Laird Group	Electronic Equipment & Instruments	0.8			N/A		8.6	
Oxford Instruments	Electronic Equipment & Instruments	0.5			14.9		1.8	
Spectris	Electronic Equipment & Instruments	0.9			20.0		2.2	
Spirax-Sarco Engineering	Machinery	2.3			27.0		1.7	
Ultra Electronics	Aerospace & Defense	1.3			14.9		2.4	
Victrex	Chemicals	1.9			20.6		2.4	
CASH		1.4	-	-	-	-	1.3	-
TOTAL		100.0	100.0	100.0	19.3	23.6	2.8	2.4

A portion of the portfolio's New Zealand dollar exposure is defensively hedged back into the US dollar.

Source: Mondrian Investment Partners, MSCI for World Ex-US Small Cap Index and MSCI EAFE Small Cap Index

TRANSACTION SUMMARY

ALASKA RETIREMENT MANAGEMENT BOARD

2016

MONDRIAN INVESTMENT PARTNERS

BUY		
COUNTRY	STOCK	DATE
SWEDEN	AAK	Q1
NEW ZEALAND	Mercury NZ	Q1
JAPAN	Nihon M&A	Q1
HONG KONG/CHINA	Sunny Optical	Q1
HONG KONG/CHINA	Microport	Q2
NETHERLANDS	Refresco Group	Q2
AUSTRALIA	Spotless	Q2
SWITZERLAND	u-blox	Q2
CANADA	WSP Global	Q2
CANADA	TransAlta Renewables	Q2
JAPAN	Resorttrust	Q3
CANADA	Innergex Renewable Energy	Q3
AUSTRALIA	Inghams	Q4

SELL		
COUNTRY	STOCK	DATE
CANADA	Morguard REIT	Q1
CANADA	Pason Systems	Q1
SINGAPORE	Ezra	Q1
HONG KONG/CHINA	Pacific Basin	Q1
FRANCE	Gaztransport et Technigaz	Q2
SINGAPORE	Starhub	Q2
UK	Rotork	Q2
UK	Bodycote	Q3
UK	Brammer	Q3
HONG KONG/CHINA	Haitian International	Q3
GERMANY	Elringklinger	Q3
SPAIN	Prosegur	Q3
SINGAPORE	Hyflux	Q4
HONG KONG/CHINA	AAC Technologies	Q4

SUMMARY PORTFOLIO CHARACTERISTICS

ALASKA RETIREMENT MANAGEMENT BOARD

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

Portfolio Turnover

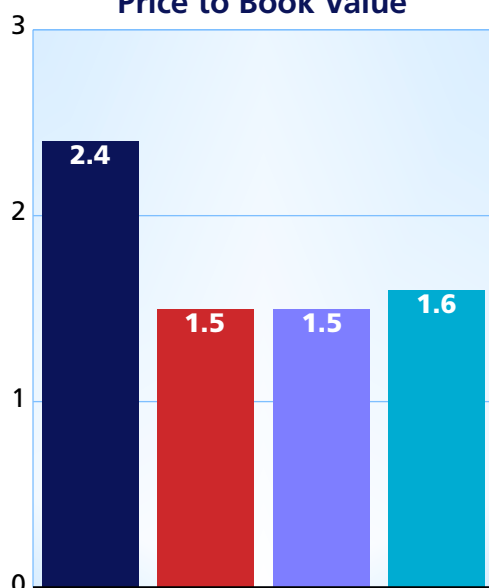
12 months to Dec. 31, 2016: 21.0%
12 months to Dec. 31, 2015: 11.8%

Market Capitalization

(Weighted Average)

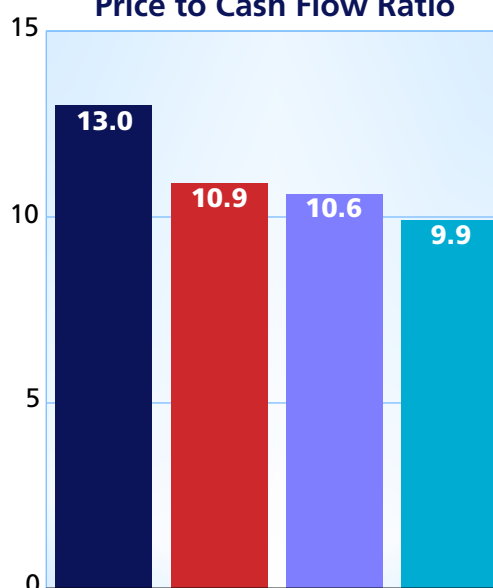
Portfolio: US\$2.9 billion
MSCI World Ex-US SmCap: US\$2.1 billion
MSCI EAFE SmCap: US\$2.2 billion

Price to Book Value



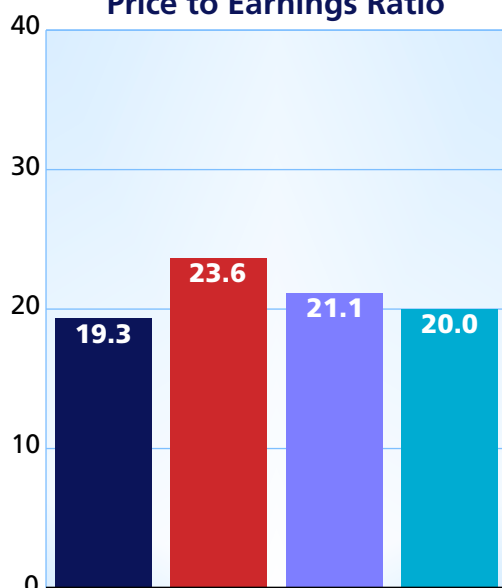
Portfolio
MSCI World Ex-US Small Cap

Price to Cash Flow Ratio

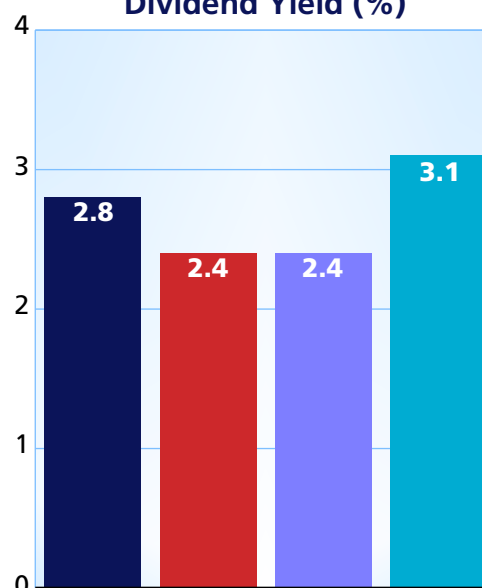


MSCI EAFE Small Cap
MSCI EAFE

Price to Earnings Ratio



Dividend Yield (%)



SECTOR ALLOCATION

MONDRIAN INTERNATIONAL SMALL CAP EQUITY REPRESENTATIVE ACCOUNT

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

	REPRESENTATIVE ACCOUNT	MSCI WORLD EX-US SMALL CAP	RELATIVE
CONSUMER DISCRETIONARY	13.9	15.4	-1.5
Automobiles & Components	6.9	2.0	4.9
Auto Components	6.9	1.9	4.9
Automobiles	—	0.1	-0.1
Consumer Durables & Apparel	—	3.0	-3.0
Household Durables	—	1.6	-1.6
Leisure Products	—	0.6	-0.6
Textiles Apparel & Luxury Goods	—	0.8	-0.8
Consumer Services	5.0	3.6	1.4
Hotels Restaurants & Leisure	2.9	3.1	-0.2
Diversified Consumer Services	2.1	0.4	1.6
Media	—	3.1	-3.1
Media	—	3.1	-3.1
Retailing	2.0	3.8	-1.7
Distributors	—	0.4	-0.4
Internet & Direct Marketing Retail	—	0.7	-0.7
Multiline Retail	—	0.5	-0.5
Specialty Retail	2.0	2.2	-0.1
CONSUMER STAPLES	8.7	6.5	2.2
Food & Staples Retailing	—	1.6	-1.6
Food & Staples Retailing	—	1.6	-1.6
Food Beverage & Tobacco	8.7	4.2	4.5
Beverages	1.5	0.9	0.5
Food Products	7.2	3.2	4.0
Tobacco	—	0.0	0.0
Household & Personal Products	—	0.7	-0.7
Household Products	—	0.2	-0.2
Personal Products	—	0.5	-0.5
ENERGY	—	4.8	-4.8
Energy	—	4.8	-4.8
Energy Equipment & Services	—	1.9	-1.9
Oil Gas & Consumable Fuels	—	3.0	-3.0
FINANCIALS	1.2	10.9	-9.7
Banks	—	4.3	-4.3
Banks	—	3.8	-3.8
Thriffs & Mortgage Finance	—	0.4	-0.4
Diversified Financials	1.2	4.9	-3.6
Diversified Financial Services	—	1.1	-1.1
Consumer Finance	—	0.5	-0.5
Capital Markets	1.2	3.3	-2.0
Insurance	—	1.8	-1.8
Insurance	—	1.8	-1.8
HEALTH CARE	6.8	6.6	0.3
Health Care Equipment & Services	4.7	3.3	1.5
Health Care Equipment & Supplies	2.1	1.8	0.3
Health Care Providers & Services	2.6	1.3	1.3
Health Care Technology	—	0.1	-0.1
Pharmaceuticals, Biotechnology & Life Sciences	2.1	3.3	-1.2
Biotechnology	—	1.0	-1.0
Pharmaceuticals	1.1	1.9	-0.7
Life Sciences Tools & Services	0.9	0.4	0.5

CONTINUED ON NEXT PAGE

The information shown above is based on an account which represents the strategy having similar guidelines and objectives. All international small cap mandates, whether separate account or commingled fund, are managed in a similar fashion. Sector weightings between portfolios are not materially different.

SECTOR ALLOCATION

MONDRIAN INTERNATIONAL SMALL CAP EQUITY REPRESENTATIVE ACCOUNT

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

	REPRESENTATIVE ACCOUNT	MSCI WORLD EX-US SMALL CAP	RELATIVE
INDUSTRIALS	36.5	20.9	15.6
Capital Goods	25.6	13.9	11.7
Aerospace & Defense	9.0	0.8	8.2
Building Products	0.6	1.4	-0.8
Construction & Engineering	4.1	3.0	1.1
Electrical Equipment	—	1.3	-1.3
Industrial Conglomerates	0.7	0.5	0.2
Machinery	8.2	5.3	2.9
Trading Companies & Distributors	3.1	1.7	1.4
Commercial & Professional Services	3.9	3.8	0.1
Commercial Services & Supplies	1.7	2.4	-0.8
Professional Services	2.2	1.4	0.9
Transportation	6.9	3.2	3.8
Air Freight & Logistics	—	0.6	-0.6
Airlines	—	0.2	-0.2
Marine	—	0.4	-0.4
Road & Rail	—	1.2	-1.2
Transportation Infrastructure	6.9	0.8	6.2
INFORMATION TECHNOLOGY	6.6	9.9	-3.2
Software & Services	—	5.1	-5.1
Internet Software & Services	—	1.3	-1.3
IT Services	—	1.9	-1.9
Software	—	1.9	-1.9
Technology Hardware & Equipment	5.3	3.2	2.1
Communications Equipment	—	0.3	-0.3
Technology Hardware, Storage & Peripherals	—	0.5	-0.5
Electronic Equipment Instruments & Components	5.3	2.4	2.9
Semiconductors & Semiconductor Equipment	1.4	1.5	-0.1
Semiconductors & Semiconductor Equipment	1.4	1.5	-0.1
MATERIALS	8.9	10.8	-1.9
Materials	8.9	10.8	-1.9
Chemicals	7.2	3.1	4.1
Construction Materials	—	0.6	-0.6
Containers & Packaging	1.7	1.4	0.3
Metals & Mining	—	5.0	-5.0
Paper & Forest Products	—	0.7	-0.7
REAL ESTATE	8.4	10.8	-2.4
Real Estate	8.4	10.8	-2.4
Equity Real Estate Investment Trusts (REITs)	8.4	6.8	1.7
Real Estate Management & Development	—	4.0	-4.0
TELECOMMUNICATION SERVICES	1.0	1.0	-0.1
Telecommunication Services	1.0	1.0	-0.1
Diversified Telecommunication Services	1.0	0.6	0.3
Wireless Telecommunication Services	—	0.4	-0.4
UTILITIES	6.0	2.3	3.7
Utilities	6.0	2.3	3.7
Electric Utilities	2.4	0.6	1.8
Gas Utilities	2.1	0.4	1.7
Multi-Utilities	—	0.3	-0.3
Water Utilities	—	0.2	-0.2
Independent Power and Renewable Electricity Producers	1.6	0.8	0.8
CASH	1.9		1.9

The information shown above is based on an account which represents the strategy having similar guidelines and objectives. All international small cap mandates, whether separate account or commingled fund, are managed in a similar fashion. Sector weightings between portfolios are not materially different.

WHY MONDRIAN INVESTMENT PARTNERS?

OUR COMPETITIVE ADVANTAGES

MONDRIAN INVESTMENT PARTNERS

EMPLOYEE OWNED

- Long-term stability and continuity
- Attracts, retains and motivates highly skilled personnel

WELL RESOURCED TEAM

- Dedicated and focused team
- Draws on the breadth and depth of research and investment experience within Mondrian's successful equity products
- Team consensus decision making

DISCIPLINED PROCESS

- Consistent investment process across all Mondrian's investment products
- Consistent inflation adjusted dividend discount methodology
- Combination of quantitative and qualitative analysis
- Detailed fundamental 'value' stock analysis

VALUE APPROACH

- Focus on real returns
- Low volatility of returns
- Defensive value characteristics

Appendix



7.3 SUMMARY BIOGRAPHIES

7.5 IMPORTANT INFORMATION

DISCLOSURE – INTERNATIONAL SMALL CAP EQUITY COMPOSITE

MONDRIAN INVESTMENT PARTNERS LIMITED

ANNUAL PERFORMANCE

Year	Total Gross USD Return	Total Net of Fees USD Return	Benchmark USD Return	Composite Standard Deviation	Benchmark Standard Deviation	Number of Portfolios	Composite Dispersion	Total Composite Assets (USD millions)	% of Firm Assets	Total Firm Assets (USD millions)
2006	37.18%	36.12%	19.46%	9.86%	12.05%	5	N/A	541.9	1.02	53,102
2007	12.60%	11.73%	3.28%	10.60%	12.77%	8	0.28%	964.3	1.50	64,338
2008	-43.31%	-43.75%	-48.03%	22.05%	22.79%	9	0.38%	666.0	1.38	48,233
2009	57.77%	56.56%	50.82%	25.09%	26.94%	9	0.70%	1,718.8	2.67	64,395
2010	31.04%	30.04%	24.51%	27.06%	29.18%	17	0.79%	4,241.1	6.20	68,386
2011	-8.04%	-8.75%	-15.81%	20.26%	23.08%	23	0.27%	4,958.9	7.53	65,891
2012	25.67%	24.71%	17.48%	17.49%	19.83%	24	0.19%	6,523.7	9.56	68,248
2013	18.21%	17.30%	25.55%	13.85%	16.27%	22	0.22%	7,585.0	10.78	70,356
2014	-4.20%	-4.93%	-5.35%	11.08%	13.34%	22	0.12%	6,953.8	10.85	64,102
2015	3.58%	2.78%	5.46%	10.17%	11.49%	21	0.20%	6,269.7	11.03	56,857
2016 (to Dec 31)	0.98%	0.20%	4.32%	11.36%	12.31%	20	0.16%	5,728.5	9.70	59,033

ACCOMPANYING NOTES CONCERNING PERFORMANCE CALCULATION AND GIPS® COMPLIANCE

- This composite was created in January 1998.
- Past performance is not a guarantee of future results.
- A complete list and description of all firm composites is available on request.

Mondrian Investment Partners Limited ("Mondrian") claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the Global Investment Performance Standards (GIPS®). Mondrian has been independently verified for the periods 1 January 1993 to 31 December 2015.

Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with the GIPS standards. Additional third party Performance Examination under GIPS of this composite's results has also been undertaken from 1 January 1998 to 31 December 2015. The verification and performance examination reports are available upon request.

The Firm is defined as all discretionary portfolios managed by Mondrian.

Mondrian is a value-oriented defensive manager seeking to achieve high real returns for its clients. Mondrian invests mainly in securities where rigorous dividend discount analysis identifies value in terms of the long-term flows of income. Mondrian's methodology is applied consistently to markets and individual securities, both bonds and equities.

The International Small Cap Equity Composite includes US dollar based discretionary fee paying portfolios, measured against the Morgan Stanley Capital International World ex US Small Cap Index, or an equivalent Index net of US withholding taxes. The portfolios are invested in non-US based small capitalization equities with the allowance for hedging.

Portfolios are valued on a trade date basis using accrual accounting. Returns are calculated using the modified Dietz method and then weighted by using beginning-of-period market values to calculate the monthly composite returns. Portfolio returns are calculated net of irrecoverable withholding tax on dividend income. New portfolios are included in the first full month of investment in the composite's strategy. Terminated portfolios remain in the composite through the last full month of investment. Additional information regarding the valuing of portfolios, calculating performance, and preparing compliant presentations are available upon request.

Composite and benchmark standard deviation are measured as the rolling 3 year annualised standard deviation of monthly returns. The dispersion of annual returns of portfolios within the composite (Composite Dispersion), is measured by the standard deviation of the equal-weighted returns of portfolios represented within the composite for the full year.

Performance results marked "Gross" do not reflect deduction of investment advisory fees. Investment returns will be reduced accordingly. For example, if a 1.00% advisory fee were deducted quarterly (0.25% each quarter) and the three year gross annual returns were 10.00%, 3.00% and -2.00%, giving an annualized return of 3.55% before deduction of advisory fees, then the deduction of advisory fees would result in three year net annual returns of 8.91%, 1.98% and -2.97% giving an annualized net return of 2.52%.

Performance returns marked "Net" reflect deduction of investment advisory fees and are calculated by deducting a quarterly indicative fee from the quarterly composite return. The indicative fee is defined as being the effective fee rate (or average weighted fee) at the composite's minimum account size as set out below. Actual net composite performance would be higher than the indicative performance shown because some accounts have sliding fee scales and accordingly lower effective fee rates.

Mondrian's investment advisory fees are described in Part II of its Form ADV. A representative United States fee schedule for institutional accounts is provided below, although it is expected that from time to time the fee charged will differ from the below schedule depending on the country in which the client is located and the nature, circumstances requirements of individual clients. The fees will be charged as follows: the first US\$50m at 0.85%; the next US\$50m at 0.70%; and amounts over US\$100m at 0.65%. Minimum segregated portfolio size is currently US\$100 million (or fees equivalent thereto).

SUMMARY BIOGRAPHIES

JANUARY 1, 2017

MONDRIAN INVESTMENT PARTNERS

Investment Professionals	Name	Position/Title	Discipline	Former Employer	Years with MIP	Industry Experience
	David Tilles	Executive Chairman	Strategy	Hill Samuel	26	42
	Clive Gillmore	CEO & Group CIO	Strategy and Global Equities	Hill Samuel	26	34
	Elizabeth Desmond	Director, CIO International Equities	Equities/International	Hill Samuel	25	29
	Nigel May	Deputy Chief Executive Officer	Equities/Trading and Implementation	Hill Samuel	25	30
	Hamish Parker	Director	Equities/International	Hill Samuel	26	35
	Ormla Krishnan	CIO Small Cap Equities	Equities/Small Cap	Koeneman Capital Management	16	23
	Andrew Miller	CIO Emerging Markets Equities	Equities/Emerging Markets	PricewaterhouseCoopers	16	18
	David Wakefield	CIO GFI & Currency	Fixed Income & Currency	Bank of England	15	24
	Daniel Philps	Head of Systematic Strategies	Equities	Dresdner Bank	18	21
	Brendan Baker	Senior Portfolio Manager	Equities/Global/Small Cap	Lombard Street Research	15	27
	Joanna Bates	Senior Portfolio Manager	Fixed Income & Currency	Hill Samuel	19	34
	Nigel Bliss	Senior Portfolio Manager	Equities/International	Cazenove & Co.	21	23
	Ginny Chong	Senior Portfolio Manager	Equities/Emerging Markets	PricewaterhouseCoopers	16	21
	Graeme Coll	Senior Portfolio Manager	Equities/Small Cap	Ernst & Young	11	18
	Frances Cuthbert	Senior Portfolio Manager	Equities/Small Cap	Deutsche Bank	17	18
	Matt Day	Senior Portfolio Manager	Fixed Income & Currency	Buck Consultants	9	14
	Steven Dutaut	Senior Portfolio Manager	Equities/International	Baillie Gifford	9	12
	Aileen Gan	Senior Portfolio Manager	Equities/Global	Accenture	11	16
	Gregory Halton	Senior Portfolio Manager	Equities/Emerging Markets	Deutsche Asset Management Ltd	13	16
	Bhavin Manek	Senior Portfolio Manager	Equities/Small Cap	Mercer Investment Consulting	10	13
	Aidan Nicholson	Senior Portfolio Manager	Equities/Small Cap	Cazenove & Co.	13	15
	Solomon Peters	Senior Portfolio Manager	Fixed Income & Currency	CEBR	16	20
	Andrew Porter	Senior Portfolio Manager	Equities/International	Frank Russell	13	17
	Alex Simcox	Senior Portfolio Manager	Equities/International	Ernst & Young LLP	9	13
	Jonathan Spread	Senior Portfolio Manager	Equities/Global	Morley Fund Management	11	17
	Boris Veselinovich	Senior Portfolio Manager	Equities/Emerging Markets	Challenger International	15	18
	Alastair Cornwell	Portfolio Manager	Equities/Small Cap	PricewaterhouseCoopers	8	9
	David Cudmore	Portfolio Manager	Fixed Income & Currency	Credit Suisse	3	6
	Kevin Fenwick	Portfolio Manager	Fixed Income & Currency	Wilshire Associates	8	13
	James Francken	Portfolio Manager	Equities/Global	Investec Asset Management	8	9
	Dan Kelly	Portfolio Manager	Equities/Emerging Markets	Deloitte LLP	7	10
	Luigi Li Calzi	Portfolio Manager	Equities	Matterhorn Investments	8	9
	Zsolt Mester	Portfolio Manager	Equities/International	Sanford C. Bernstein	2	5
	Sarah Mitchell	Portfolio Manager	Fixed Income & Currency	Royal Bank of Scotland	5	12
	Kim Nguyen	Portfolio Manager	Equities/International	Citigroup Asset Management	12	16
	Melissa Platt	Portfolio Manager	Equities/International	FundSource Research	13	18
	Bilgin Soyly	Portfolio Manager	Equities/International	Yapi Kredi Bank	16	17
	Paul Thompson	Portfolio Manager	Equities/Global	Deloitte LLP	7	10
	Sam Wyatt	Portfolio Manager	Equities/Emerging Markets	Deloitte LLP	3	8
	Charl Basson	Asst. Portfolio Manager	Equities/Small Cap	PricewaterhouseCoopers	1	4
	Christopher Davis	Asst. Portfolio Manager	Equities/International	PricewaterhouseCoopers	2	5
	Matthew Gunby	Asst. Portfolio Manager	Equities/Global	Martin Currie Inv. Management	1	4
	Benjamin Hall	Asst. Portfolio Manager	Equities/Small Cap	None	6	6
	Bruno Vignoto	Asst. Portfolio Manager	Fixed Income & Currency	Moody's Analytics	1	6
	Michael Bray	Research Analyst	Equities/Emerging Markets	None	5	5
	Elina Grinchenko	Research Analyst	Equities/Small Cap	None	5	5
	David Miller	Research Analyst	Equities	None	4	4
	Natasha Nussbaum	Investment Analyst	Equities/International	None	1	1

SUMMARY BIOGRAPHIES

JANUARY 1, 2017

MONDRIAN INVESTMENT PARTNERS

Investment Professionals	Name	Position/Title	Discipline	Former Employer	Years with MIP	Industry Experience
	Brian Heywood	Head of Implementation	Implementation	Mercury Asset Management	20	21
	Alan Fedarb	Portfolio Managers' Asst.	Implementation	Gartmore Fund Managers	19	27
	Magnus Paterson	Portfolio Managers' Asst.	Implementation	M&G	3	12
	Vinit Shah	Portfolio Managers' Asst	Implementation	State Street Bank	11	19
	Stuart Thomas	Portfolio Managers' Asst	Implementation	ABN AMRO Asset Management	8	17
	Clark Simpson	Head of Trading	Trading	None	15	15
	Martin Shaw	Senior Trader	Trading	HSBC	2	30
	Ian Taylor	Senior Trader	Trading	Invesco Asset Management Ltd	6	23
	Arthur van Hoogstraten	Senior Trader	Trading	Banque Paribas	18	29

Client Service Professionals	Name	Position/Title	Former Employer	Years with MIP	Industry Experience
	LONDON				
	Russell Mackie	Global Head of Client Services & Marketing, MIP Limited, London	Hodgson Martin Ltd.	19	22
	Andrew Kiely	Manager, Client Services, London	Bank of Ireland Asset Management	10	20
	Jessica Hsia	Senior Client Services Executive, Client Services, London	Delaware Investments	12	13
	Paul Danaswamy	Client Services Executive, Client Services, London	BNY Mellon Asset Servicing	5	10
	PHILADELPHIA				
	Paul Ross	President, MIP (U.S.), Inc., Philadelphia	The Travelers Corporation*	*23	35
	Patricia Karolyi	Executive Vice President, MIP (U.S.), Inc., Philadelphia	Blank, Rome, Comisky & McCauley*	*27	27
	James Brecker	Senior Vice President, Client Services, MIP (U.S.), Inc., Philadelphia	None*	*16	16
	Laura Conlon	Senior Vice President, Client Services, MIP (U.S.), Inc., Philadelphia	Morgan Lewis & Bockius, LLP*	*19	19
	James Hill	Senior Vice President, Client Services, MIP (U.S.), Inc., Philadelphia	PNC Equity Advisors*	*18	25
	David Hogan	Senior Vice President, Client Services, MIP (U.S.), Inc., Philadelphia	Charles Schwab	1	29
	Justin Richards	Senior Vice President, Client Services, MIP (U.S.), Inc., Philadelphia	None*	*17	17
	Todd Rittenhouse	Senior Vice President, Client Services, MIP (U.S.), Inc., Philadelphia	Chartwell Investment Partners*	*17	25
	Steve Starnes	Senior Vice President, Client Services, MIP (U.S.), Inc., Philadelphia	1838 Investment Advisers*	*14	36
	Peter Riviello	Vice President, Client Services, MIP (U.S.), Inc., Philadelphia	None*	*13	13
	Rebecca Farnsworth	Asst. Vice President, Client Services, MIP (U.S.), Inc., Philadelphia	None	12	12

*Prior to joining Mondrian Investment Partners (U.S.), Inc. in September 2004, these individuals worked with Delaware Investments. Delaware Investments was an affiliate of Mondrian Investment Partners Limited prior to the management buy-out and name change of September 2004. The listing for "Former Employer" denotes the individual's employer prior to joining Delaware Investments. The listing for "Years with MIP" includes both years with Delaware Investments and MIP (U.S.), Inc. Todd Rittenhouse rejoined in 2007 after having worked with Delaware Investments from 1992 – 1999.

IMPORTANT INFORMATION

MONDRIAN INVESTMENT PARTNERS

TERM/ISSUE	DESCRIPTION/DISCLOSURE
Benchmark:	<p>Mondrian benchmarks the International Small Cap Equity product against the MSCI World Ex-US Small Cap Index and the MSCI EAFE Small Cap Index. Surveys conducted by investment consultants show that these are the most commonly used small cap indices. Both these indices include stocks which are ranked at approximately the bottom 15th percentile by available market capitalization in each local market index.</p> <p>Neither MSCI nor any other party involved in or related to compiling, computing or creating the MSCI data makes any express or implied warranties or representations with respect to such data (or the results to be obtained by the use thereof), and all such parties hereby expressly disclaim all warranties of originality, accuracy, completeness, merchantability or fitness for a particular purpose with respect to any of such data. Without limiting any of the foregoing, in no event shall MSCI, any of its affiliates or any third party involved in or related to compiling, computing or creating the data have any liability for any direct, indirect, special, punitive, consequential or any other damages (including lost profits) even if notified of the possibility of such damages. No further distribution or dissemination of the MSCI data is permitted without MSCI's express written consent.</p>
Confidentiality:	This document is confidential and only for the use of the party named on its cover and their advisers. It may not be redistributed or reproduced, in whole or in part.
Correlation:	The source of the correlation calculation on page 7.2 is Mondrian Investment Partners.
Current Views:	Views expressed were current as of the date indicated, are subject to change, and may not reflect current views. Views should not be considered a recommendation to buy, hold or sell any security and should not be relied on as research or investment advice.
Forecast "Real" Annualized Market Returns:	These forecast "real" annualized market returns are used solely as a basis for making judgments about country allocation weightings and are not intended to be indications of expected returns.
Forward-Looking Statements:	This document may include forward-looking statements. All statements other than statements of historical facts are forward-looking statements (including words such as "believe," "estimate," "anticipate," "may," "will," "should," "expect"). Although we believe that the expectations reflected in such forward-looking statements are reasonable, we can give no assurance that such expectations will prove to be correct. Various factors could cause actual results or performance to differ materially from those reflected in such forward-looking statements.
Performance Results:	<p>Performance provided is that of the Mondrian International Small Cap Equity Composite. These performance results do not reflect deduction of investment advisory and other fees and are net of transaction costs and withholding tax. Investment returns will be reduced accordingly. For example, if a 1.00% advisory fee were deducted quarterly (0.25% each quarter) and your annual return was 10% (approximately 2.411% each quarter) before deduction of advisory fees, the deduction of advisory fees would result in an annualized return of approximately 8.904%. Mondrian's investment advisory fees are described in Part II of its Form ADV. A representative US dollar fee schedule for institutional accounts is provided below, although it is expected that from time to time the fee charged will differ from the below schedule depending on the country in which the client is located and the nature, circumstances and requirements of individual clients. The fees will be charged as follows: the first US\$50m at 0.85%; the next US\$50m at 0.70% and amounts thereafter at 0.65%. New accounts are typically subject to a minimum account size of US\$100 million (or fees equivalent thereto).</p> <p>Unless otherwise noted, all returns are in US Dollar.</p>
Purchasing Power Parity Valuations:	Using proprietary Mondrian models. Further information on these models can be provided on request.
Universe Information:	The information provided in the standard deviation chart is from Callan Associates.
US Consumer Price Index:	Data provided through Datastream; two months in arrears.

MONDRIAN EQUITY PRODUCTS

U.S. INVESTORS

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

MONDRIAN PRODUCT AND TYPICAL BENCHMARK	VEHICLE			
	SEPARATE ACCOUNT	LIMITED PARTNERSHIP	COLLECTIVE INVESTMENT TRUST	REGISTERED MUTUAL FUND
Non-US Equity • MSCI EAFE	Closed	Open Minimum: \$5 million	Open Minimum: \$3 million	Open Mondrian IEQ Fund: DPIX Minimum: \$1 million
Non-US Equity ESG • MSCI EAFE		Open Minimum: \$2 million		
Focused Non-US Equity • MSCI EAFE	Open Minimum: \$100 million			Laudus Mondrian ⁴
Global Equity • MSCI World	Open Minimum: \$100 million	Open Minimum: \$2 million		
All Countries World Equity • MSCI ACW	Open Minimum: \$300 million ¹ \$100 million ²	Open Minimum: \$20 million ³		
All Countries World Ex-US Equity • MSCI ACW ex-US	Closed	Open Minimum: \$5 million	Open Minimum: \$5 million	
Focused All Countries World Ex-US Equity • MSCI ACW ex-US	Open Minimum: \$300 million ¹ \$100 million ²			
Emerging Markets Equity • MSCI EM	Closed	Closed		
Focused Emerging Markets Equity • MSCI EM	Closed	Closed		Laudus Mondrian ⁴
Emerging Markets Wealth • MSCI EM	Open Minimum: \$100 million	Open Minimum: \$1 million	Open	
Non-US Small Cap Equity • MSCI World ex-US Small Cap	Closed	Closed		
Emerging Markets Small Cap Equity • MSCI EM Small Cap	Open Minimum: \$150 million	Open Minimum: \$5 million		

Closed is defined as the vehicle is no longer available to new investors. The vehicle remains open to existing clients for contributions.

1. Utilizing separate account only
2. Utilizing commingled fund for emerging markets exposure
3. Utilizing commingled fund for both global equity and emerging markets exposure
4. Mondrian serves as sole sub-advisor to a range of registered mutual funds known as the Laudus Mondrian Funds. The Funds are advised by Charles Schwab Investment Management. For additional information on the Laudus Mondrian Funds, please contact your Mondrian client service representative or see www.laudusfunds.com

Mondrian may, from time to time, reduce and/or increase the minimum amounts listed above. The above is for information purposes only and intended solely for the person to whom it has been delivered. It is not an offer or solicitation with respect to the purchase of any securities. Any investment decision in connection with any investment vehicle should be based on the information contained in its written offering materials.

MONDRIAN FIXED INCOME PRODUCTS

U.S. INVESTORS

DECEMBER 31, 2016

MONDRIAN INVESTMENT PARTNERS

MONDRIAN PRODUCT AND TYPICAL BENCHMARK	VEHICLE			
	SEPARATE ACCOUNT	LIMITED PARTNERSHIP	COLLECTIVE INVESTMENT TRUST	REGISTERED MUTUAL FUND
Global Fixed Income <ul style="list-style-type: none"> • Citigroup WGBl • Bloomberg Barclays Global Aggregate Bond Index • JPMorgan Global Government Bond Index 	Open Minimum: \$50 million	Open Minimum: \$1 million		
International Fixed Income <ul style="list-style-type: none"> • Citigroup WGBl ex-USD • Bloomberg Barclays Global Aggregate ex-USD Bond Index • JPMorgan Global Government ex-USD Bond Index 	Open Minimum: \$50 million	Open Minimum: \$1 million		Laudus Mondrian ¹
Global Inflation-Linked Bonds <ul style="list-style-type: none"> • Bloomberg Barclays World Government Inflation-Linked Bond Index 	Open Minimum: \$50 million	Open Minimum: \$1 million		
US Aggregate Fixed Income <ul style="list-style-type: none"> • Bloomberg Barclays US Aggregate Bond Index 	Open Minimum: \$50 million	Open Minimum: \$1 million		
Global Debt Opportunities <ul style="list-style-type: none"> • 80% JPMorgan GGBI/20% JPMorgan GBI-EM Glbl. Div. • 80% Citigroup WGBl/20% Custom Citigroup EM Local Currency Bond Index 	Open Minimum: \$50 million	Open Minimum: \$1 million		
Local Currency Emerging Markets Debt <ul style="list-style-type: none"> • JPMorgan GBI-EM Global Diversified 	Open Minimum: \$50 million	Open Minimum: \$1 million		
Hard Currency Emerging Markets Debt <ul style="list-style-type: none"> • JPMorgan EMBI Global Diversified 	Open Minimum: \$50 million	Open Minimum: US\$5 million		
Blended Currency Emerging Markets Debt <ul style="list-style-type: none"> • 50% JPMorgan EMBI Global Diversified/50% JPMorgan GBI-EM Global Diversified 	Open Minimum: \$50 million	Open Minimum: US\$10 million		

1. Mondrian serves as sole sub-advisor to a range of registered mutual funds known as the Laudus Mondrian Funds. The Funds are advised by Charles Schwab Investment Management. For additional information on the Laudus Mondrian Funds, please contact your Mondrian client service representative or see www.laudusfunds.com

Mondrian may, from time to time, reduce and/or increase the minimum amounts listed above. The above is for information purposes only and intended solely for the person to whom it has been delivered. It is not an offer or solicitation with respect to the purchase of any securities. Any investment decision in connection with any investment vehicle should be based on the information contained in its written offering materials.

Alaska Retirement Management Board

Domestic Fixed Income Presentation

Victor Djajalie, CFA

Juneau, Alaska

March 3, 2017

Fixed Income Investment Team

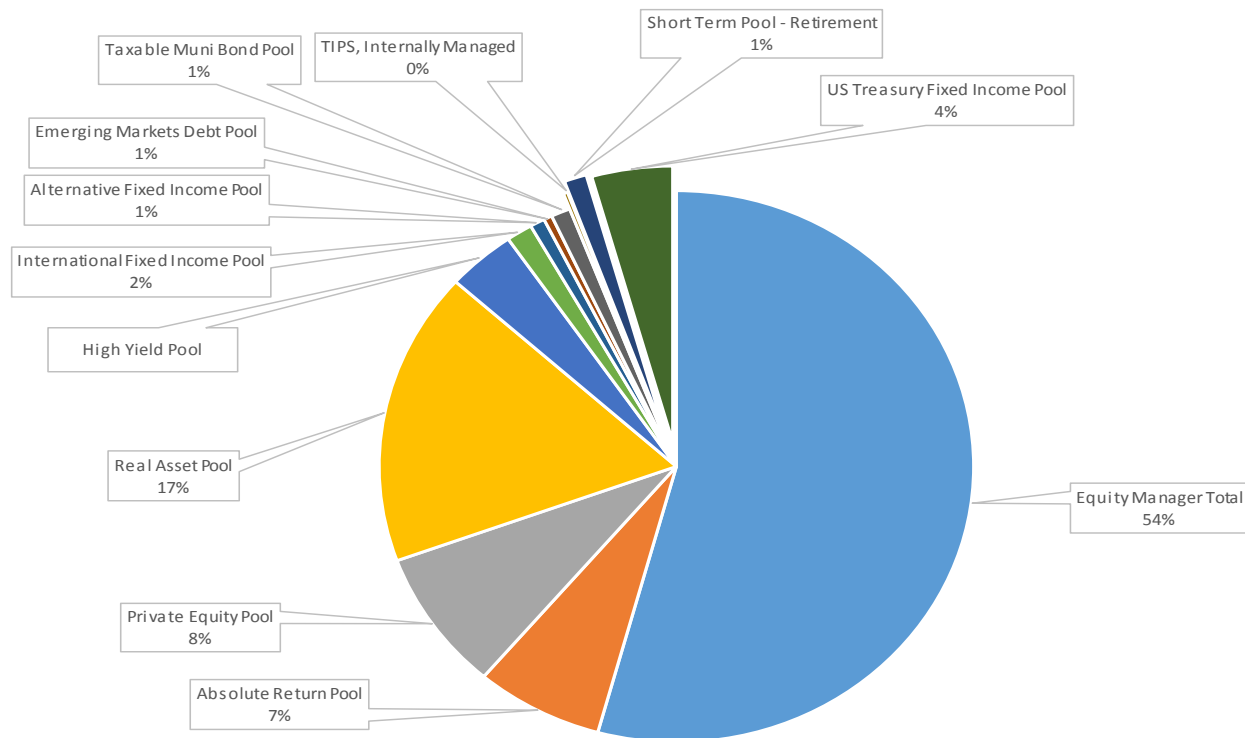
ARMB Asset Allocation

Investment Approach & Risks

Fixed Income Investment Team



ARMB Asset Allocation



As of December 31, 2016

Investment Approach

- Identify a broad range of potential movements in the yield curve from one to three months into the future.
- Position portfolios to attempt to outperform over the full set of scenarios.
- Manage trading costs and give liquidity sparingly.
- Seek yield in non-Treasury holdings:
 - Position portfolios in higher conviction securities.
 - Diversify positions.
- Manage the basis between indexed and non-inflation-indexed Treasury holdings.

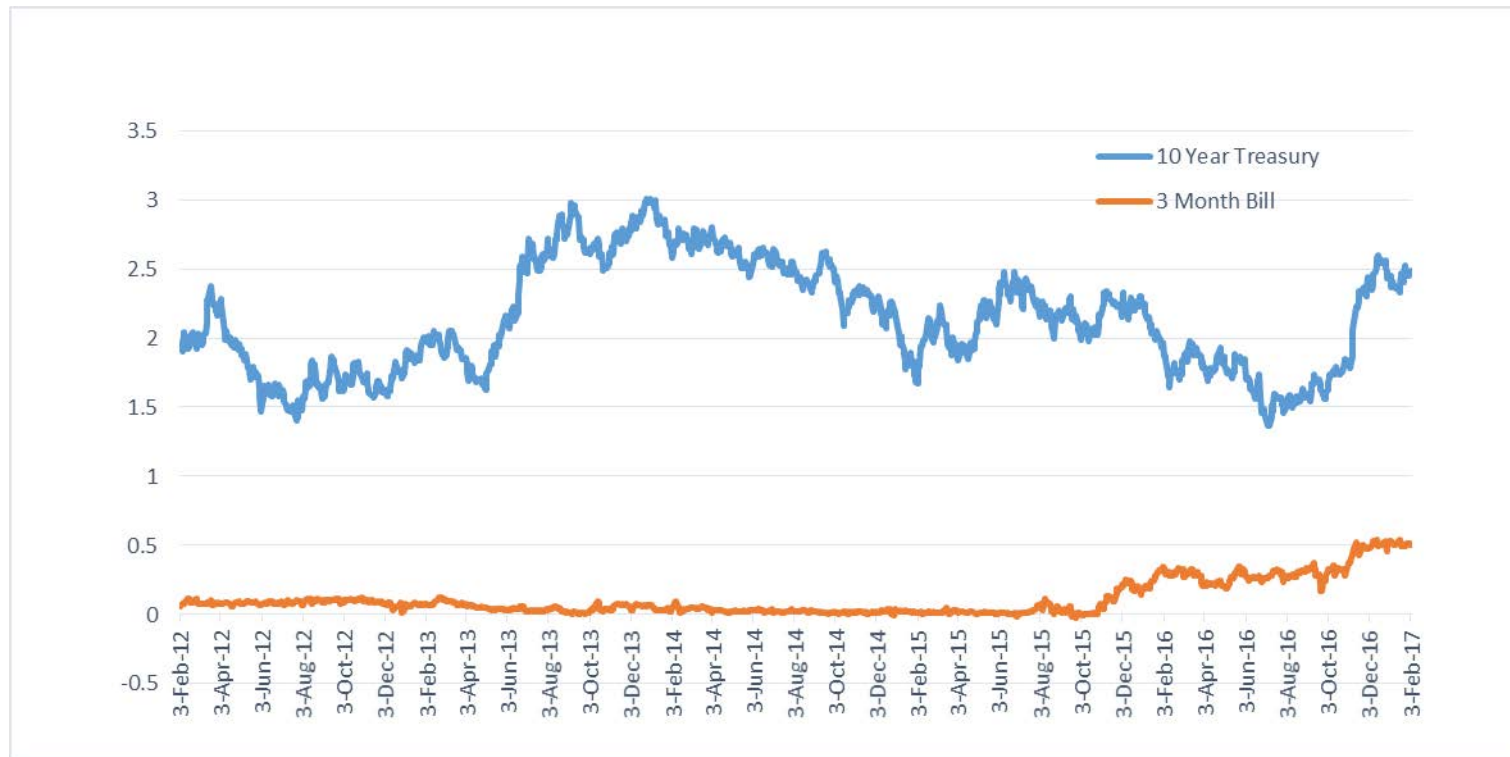
Risks to Investment Approach

- Future yield curve movements may be other than what we forecast.
- Spread changes are not explicitly incorporated, so could detract from performance.
- Changes in inflation expectations may not mirror actual changes in inflation; carry differences could detract from performance.
- Idiosyncratic, bond-specific, credit and structural risk is present.

Investment Outlook

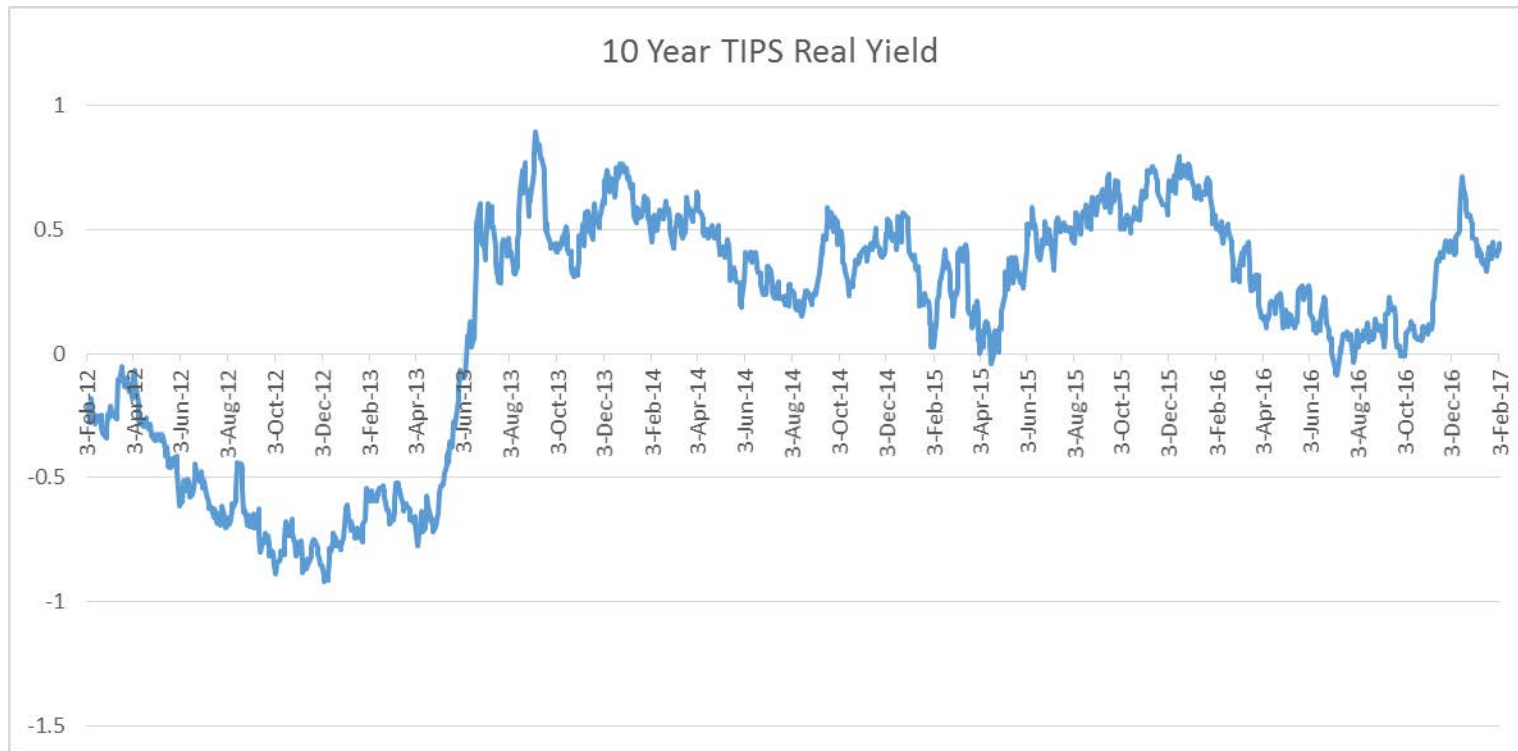
Portfolio Positioning

Treasury Yields are Still Low Despite Recent Rise



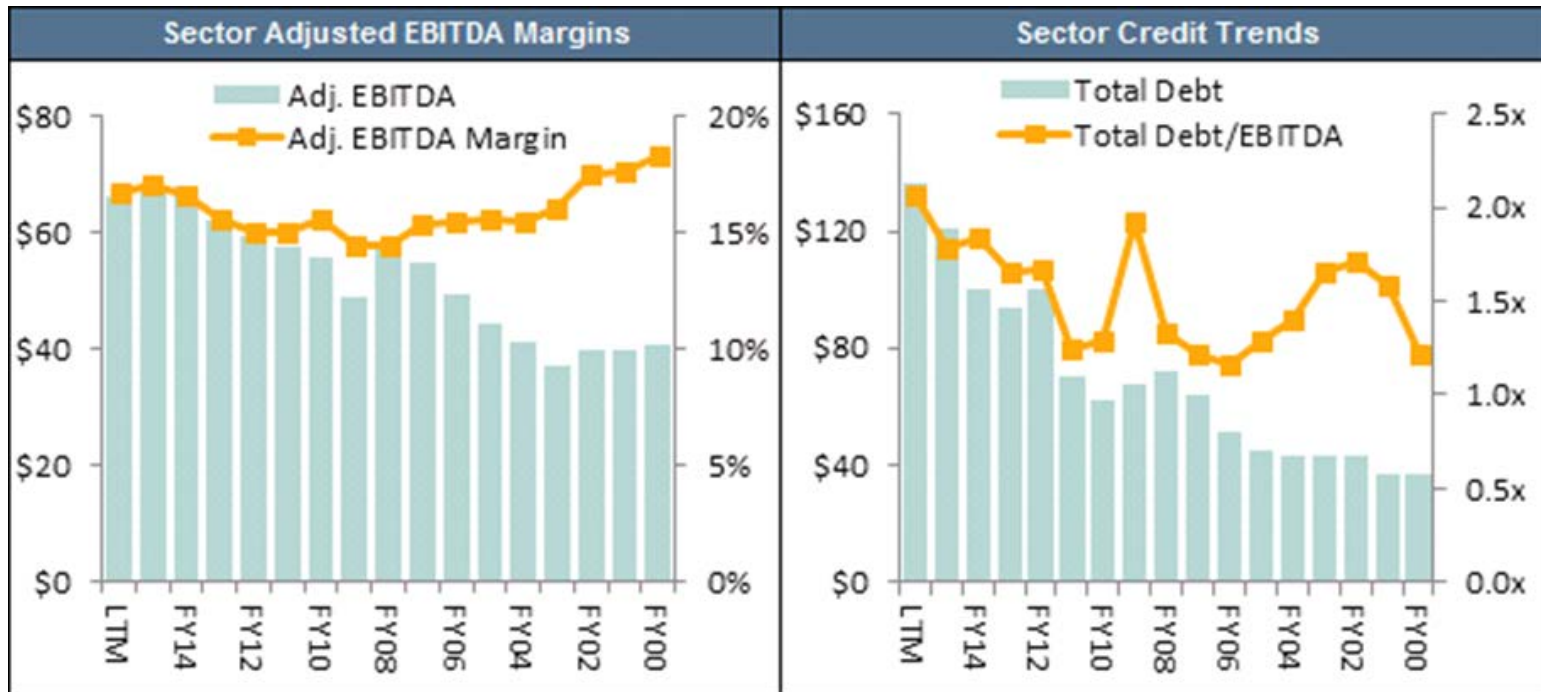
Source: JP Morgan

TIPS Yields are Also Range Bound



Source: JP Morgan

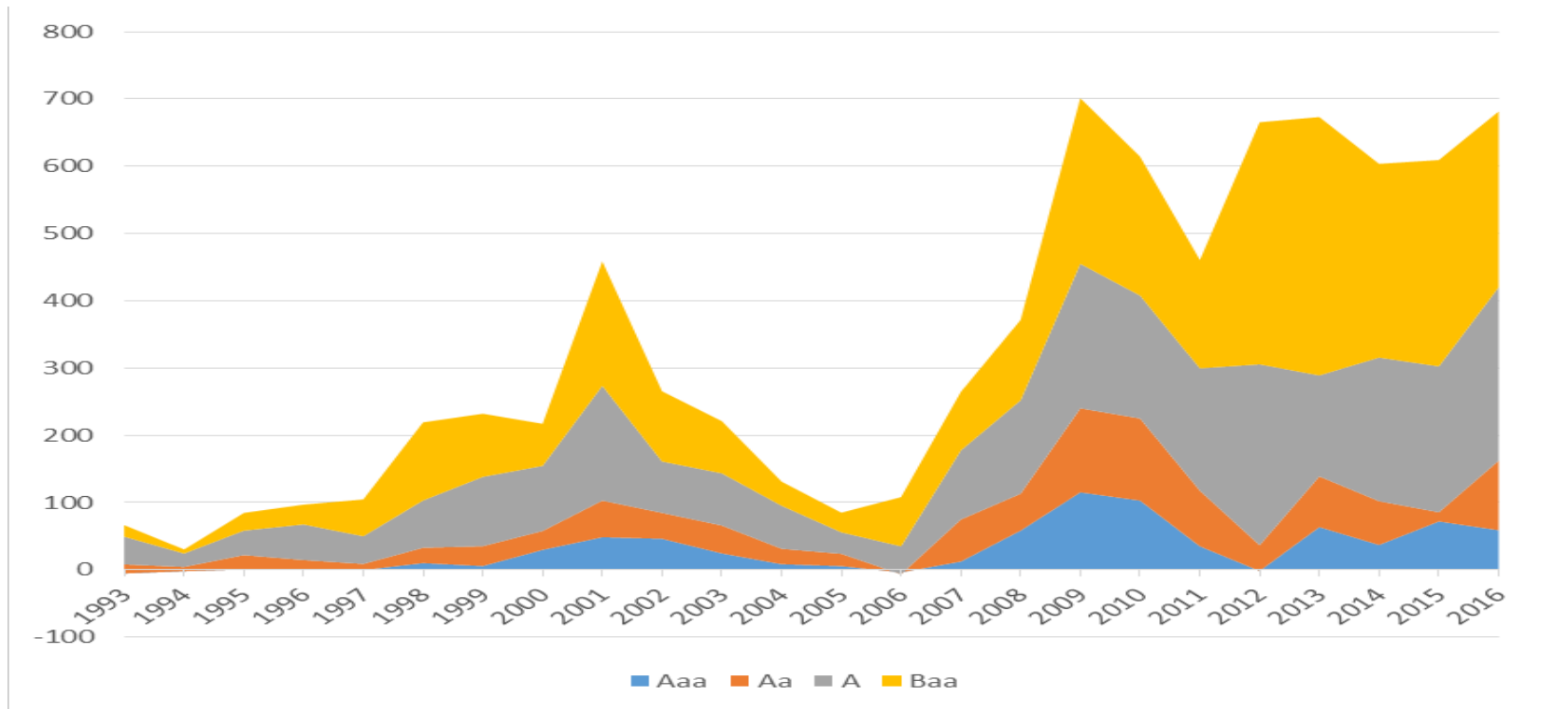
Corporate Fundamentals are Deteriorating



Source: CreditSights, Company Reports. Note: \$ bn. Peer group includes DHR, DOV, EMR, ETN, GE, HON, IR, ITW, JCI, MMM, PH, ROK, ROP, TXT and UTX. FYE 12/31 except EMR, JCI, ROK (9/30) and PH (6/30). LTM data through 9/30/16. EBITDA adjusted for special items such as restructuring, one-time items. Credit metrics based on peer group median.

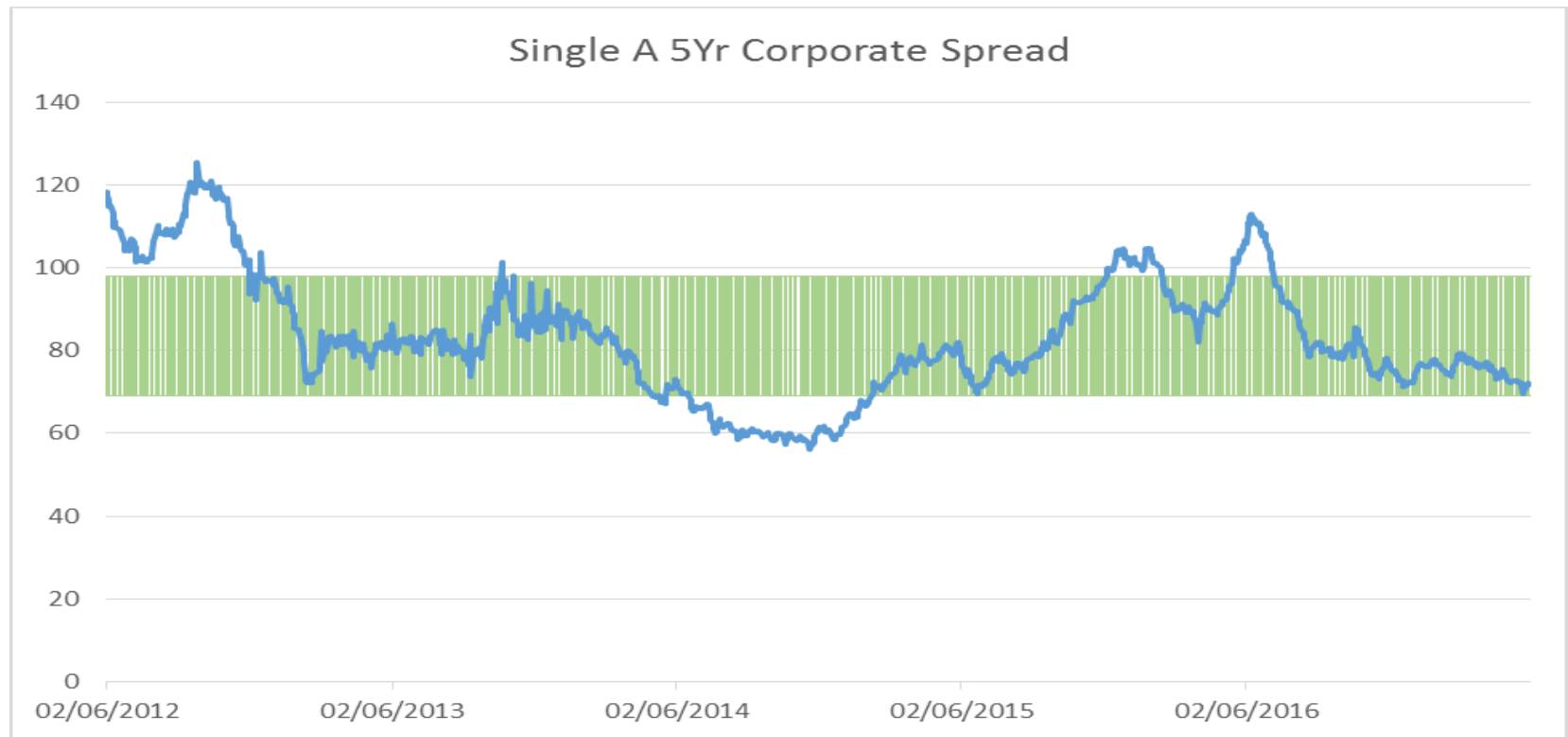
Source: CreditSights

Investment Grade Corporate Bond Net Issuance



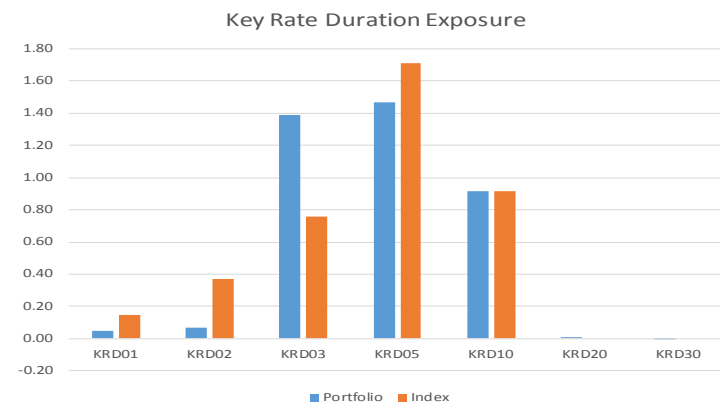
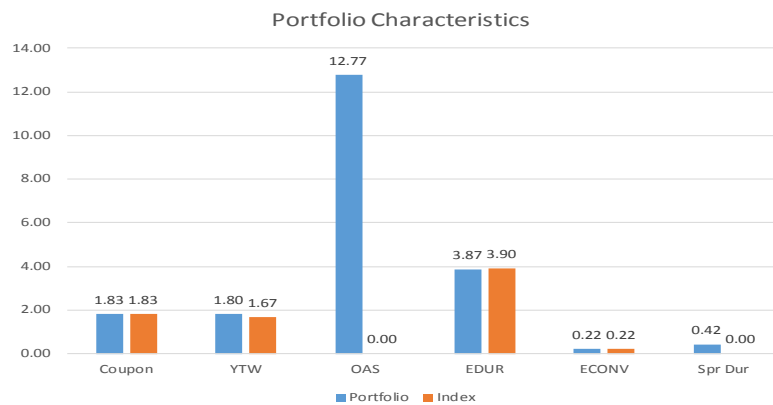
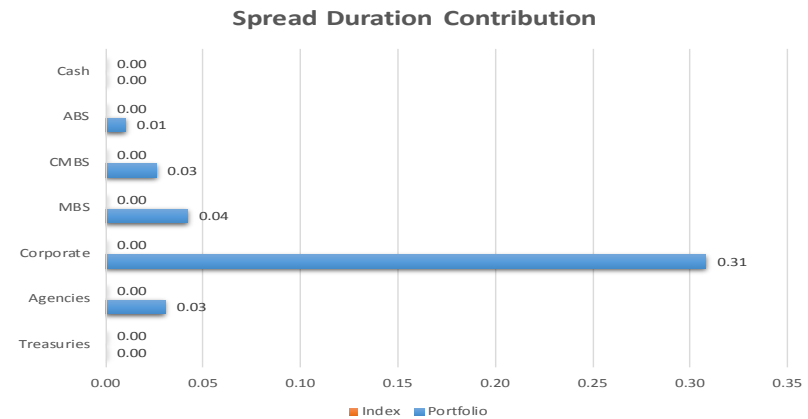
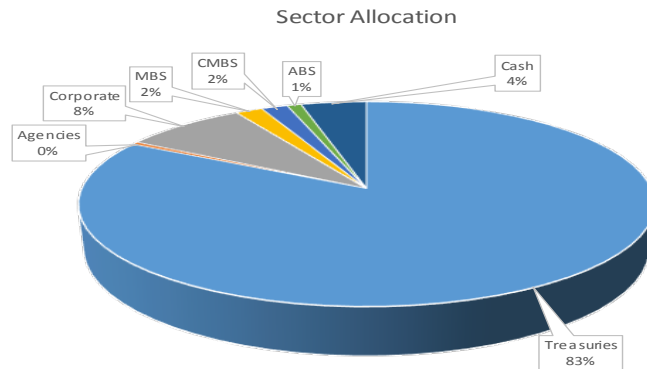
Source: Barclays

Spreads are Tight



Source: Barclays Live

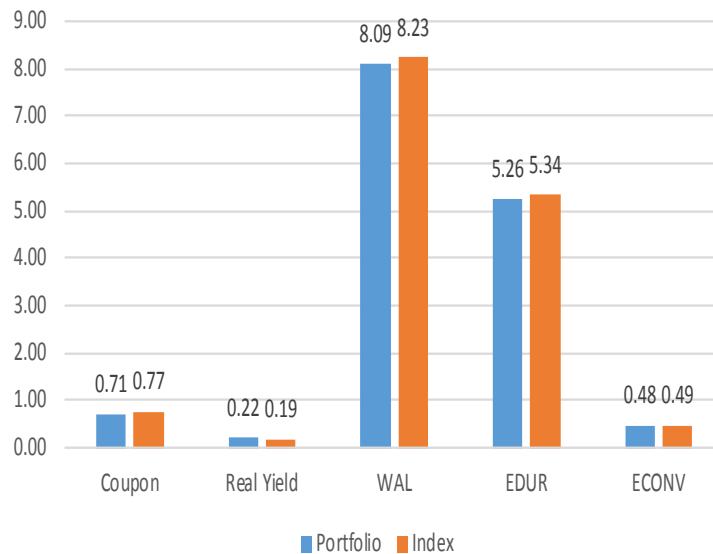
Intermediate Treasury Portfolio Dashboard



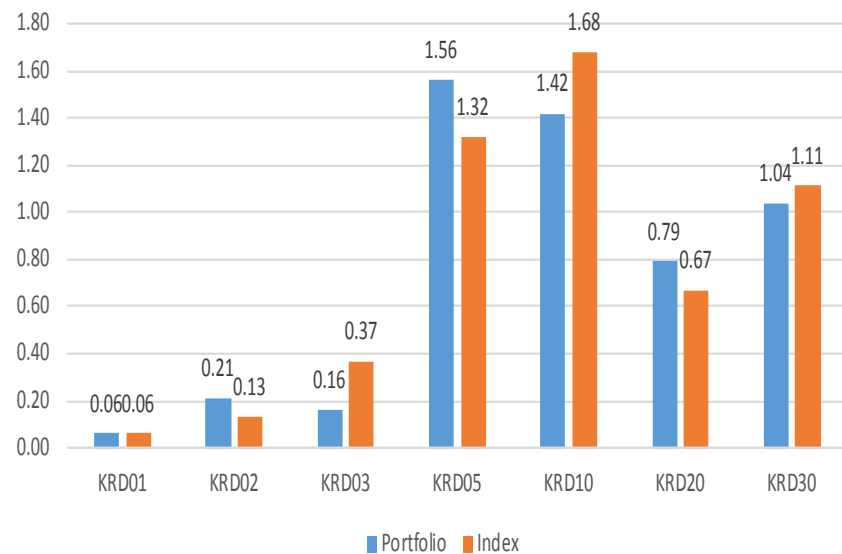
As of December 31, 2016

Treasury Inflation Protected Securities Portfolio Dashboard

Portfolio Characteristics

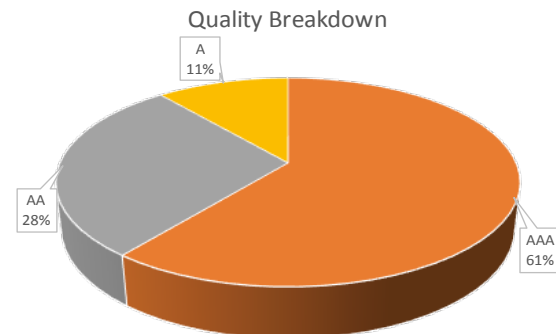
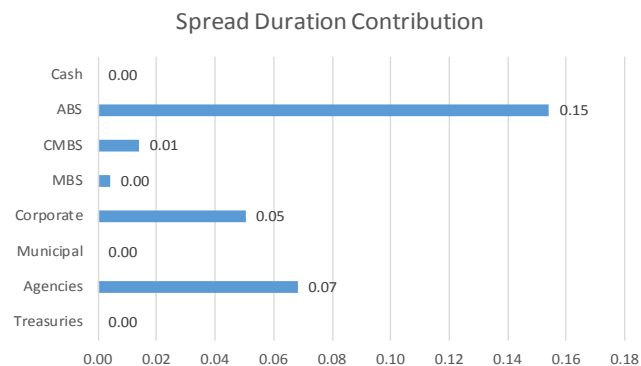
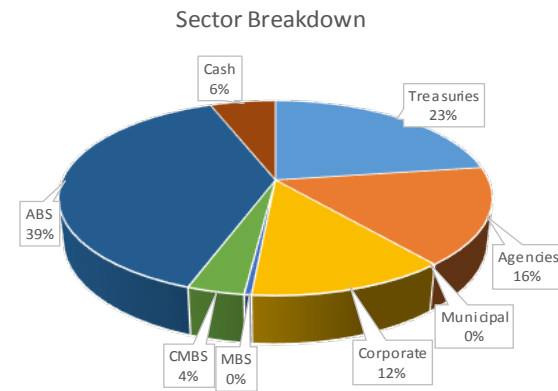
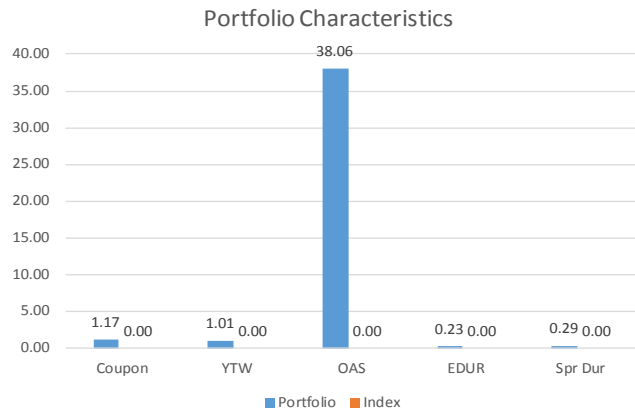


Key Rate Duration Exposure



As of December 31, 2016

Short-Term Fixed Income Dashboard



As of December 31, 2016

Portfolio Performance

Performance

	3 months	1 Year	3 Years	5 Years	Inception	Inception Date
Intermediate Treasury Portfolio	-0.16%	2.78%	2.43%	1.85%	2.48%	Apr-10
Index	-0.26%	2.50%	2.22%	1.64%	2.31%	
Difference	0.10%	0.28%	0.21%	0.21%	0.17%	

	3 months	1 Year	3 Years	5 Years	Inception	Inception Date
Treasury Inflation Protected Securities Portfolio	1.04%	6.61%	2.43%	2.01%	4.52%	Jul-07
Index	0.96%	6.58%	2.40%	1.93%	4.43%	
Difference	0.08%	0.03%	0.03%	0.08%	0.09%	

	3 months	1 Year	3 Years	5 Years	Inception	Inception Date
Short Term Fixed Income	0.19%	0.68%	0.41%	0.40%	3.01%	Jul-94
Index	0.10%	0.27%	0.12%	0.10%	2.73%	
Difference	0.09%	0.41%	0.29%	0.30%	0.28%	

Source: Callan and State Street, As of September 30, 2016

Alaska Retirement Management Board

Domestic Fixed Income Presentation

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: GAM Termination

ACTION: X

DATE: March 3, 2017

INFORMATION: _____

BACKGROUND

The Alaska Retirement Management Board (ARMB) hired Global Asset Management (GAM) in January of 2010 as part of its absolute return program. In September of 2016, the ARMB placed GAM on its manager watch list due primarily to the replacement of GAM's long-standing Chief Investment Officer and the consolidation of the GAM's hedge fund business with GAM's multi-asset portfolio solutions business. GAM currently manages \$229 million on behalf of the ARMB.

STATUS

Staff has reviewed GAM's performance, organization, and absolute return business. Many absolute return managers are going through a period of poor performance. In GAM's case, performance issues have been accompanied by material decreases in managed assets. This has led to management and leadership changes that culminated in GAM combining their hedge fund business with their multi-asset portfolio business.

Staff is concerned about the changes to GAM's business and leadership structure and has concluded that the combination of GAM's performance, decrease in assets, and organizational changes warrant termination. As a result, staff is recommending that the ARMB liquidate the GAM portfolio and terminate the contractual relationship. Liquidated assets will initially be invested in the fixed income portfolio.

RECOMMENDATION

That the Alaska Retirement Management Board direct staff to liquidate the GAM portfolio and to terminate the contractual relationship when the liquidation is complete.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Alternative Beta Search

ACTION: X

DATE: March 3, 2017

INFORMATION:

BACKGROUND

The Alaska Retirement Management Board has an asset allocation of seven percent to absolute return strategies and \$1.7 billion invested with six managers in the space. The role of absolute return in the ARMB's portfolio is to provide a source of real return diversified from exposure to traditional stock and bond market beta. The ARMB started the program in 2004 by investing in active hedge fund managers through custom fund-of-funds managers, like KKR Prisma. Over time, the ARMB and staff have looked for ways to reduce cost and increase risk-adjusted returns in the portfolio. Towards this end, the ARMB has added direct exposure to managers like Allianz, Zebra, and KKR Apex Equity and built a portfolio of direct opportunistic investments through Crestline and KKR Prisma.

Historically, hedge funds have offered a combination of low market beta (residual stock and bond exposure), alpha (manager skill), and what some have termed alternative beta. Alternative beta is a set of risk exposures that are somewhat unique to the hedge fund space that provide a source of return for bearing risks that are uncorrelated with traditional market risks.

STATUS

Financial academics have written a series of research papers discussing methods of systematically investing in alternative beta. Practitioners have refined these ideas and there are now investable strategies in the market. These approaches are expected to provide uncorrelated sources of return at a much lower fee and with generally better liquidity than traditional hedge funds. Alternative beta often include exposure to strategies like equity long/short, global macro, convertible bond arbitrage, and event driven.

Staff has met with several managers and believes that an investment in alternative beta may be a good complement to the other strategies in the ARMB absolute return portfolio. Staff discussed alternative beta strategies with Callan and the roster of potential managers is rich enough to warrant a search.

RECOMMENDATION

That the Alaska Retirement Management Board direct staff to engage Callan Associates to conduct a search for one or more alternative beta managers for an initial mandate of up to \$300 million.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Callan Investment Structure Evaluation
Asset Allocation Options

ACTION: X

DATE: March 3, 2017

INFORMATION: _____

BACKGROUND

On February 18, 2016, the ARMB directed staff to engage Callan to conduct a governance and quality review of the Defined Contribution Retirement Plans, Deferred Compensation Plan, and Alaska Supplemental Annuity Plan (collectively called Plans). The review was to focus on seven priorities including an evaluation of the investment structure available to participants in the Plans.

On September 30, 2016, Callan presented the results of their review to the ARMB.

The Plans currently offer three balanced funds as investment options: the Alaska Balanced Trust and the Alaska Long-Term Balanced Trust managed by T.Rowe Price and the Global Balanced Fund managed by SSgA.

As of December 31, 2016, approximate participant assets invested in the Alaska Balanced Trust were \$1,187 million, the Alaska Long-Term Balanced Trust were \$615 million, and the Global Balanced Fund were \$108 million.

Callan Recommendation:

Remove the balanced funds and map participants to the age-appropriate target date fund.

Staff recommends terminating the SSgA Global Balanced Fund and mapping those participants to the Alaska Long-Term Balanced Trust.

RECOMMENDATION

The ARMB directs staff to terminate the SSgA Global Balanced Fund and map those participants to the Alaska Long-Term Balanced Trust in the Plans.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Callan Investment Structure Evaluation
Capital Preservation

ACTION: X

DATE: March 3, 2017

INFORMATION: _____

BACKGROUND

On February 18, 2016, the ARMB directed staff to engage Callan to conduct a governance and quality review of the Defined Contribution Retirement Plans, Deferred Compensation Plan, and Alaska Supplemental Annuity Plan (collectively called Plans). The review was to focus on seven Priorities including an evaluation of the investment structure available to participants in the Plans.

On September 30, 2016, Callan presented the results of their review to the ARMB.

The Defined Contribution Retirement Plans currently offer the Alaska Money Market Master Trust managed by T.Rowe Price. The Deferred Compensation Plan and the Supplemental Annuity Plan currently offer a stable value investment option also managed by T.Rowe Price. The four Plans also offer a Treasury Money Market option managed by SSgA.

As of December 31, 2016, approximate participant assets invested in the Alaska Money Market Master Trust were \$18 million, the Treasury Money Market option were \$59 million and the stable value options in the Deferred Compensation Plan and Supplemental Annuity Plan were \$555 million.

Callan Recommendation:

Remove the money market options and proceed with stable value as the principal protection option.

Staff recommends adding a stable value option in the Defined Contribution Retirement (DCR) Plans and maintaining the US Treasury Money Market option across all plans. Staff recommends removing the Alaska Money Market Trust as a stand-alone investment option from the DCR Plans and mapping participants into the US Treasury Money Market option.

RECOMMENDATION

The ARMB direct staff to add a stable value option in the Defined Contribution Retirement Plans.

Additionally, the ARMB directs staff to remove the Alaska Money Market Trust as a stand-alone investment option from the DCR Plans and map those participants into the US Treasury Money Market option.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Callan Investment Structure Evaluation
Fixed Income

ACTION: X

DATE: March 3, 2017

INFORMATION: _____

BACKGROUND

On February 18, 2016, the ARMB directed staff to engage Callan to conduct a governance and quality review of the Defined Contribution Retirement Plans, Deferred Compensation Plan, and Alaska Supplemental Annuity Plan (collectively called Plans). The review was to focus on seven priorities including an evaluation of the investment structure available to participants in the Plans.

On September 30, 2016, Callan presented the results of their review to the ARMB.

The Plans currently offer a Long U.S. Treasury Bond Index fund and a World Government Bond ex-U.S. Index fund managed by SSgA as well as a Government/Credit Bond Index fund and an Intermediate Bond fund managed by BlackRock.

As of December 31, 2016, approximate participant assets invested in the Long U.S. Treasury Bond Index fund were \$24 million, the World Government Bond ex-U.S. Index fund were \$19 million, the Government/Credit Bond Index fund were \$107 million, and the Intermediate Bond fund were \$74 million.

Callan Recommendation:

Consolidate the existing fixed income options into a custom multi-manager fixed income fund.

Staff recommends creating a stand-alone, passive fixed income investment option benchmarked to the Bloomberg Barclays U.S. Aggregate Bond Index and mapping the existing stand-alone fixed income options to it. Staff also recommends evaluating active, core-plus options for consideration at a later date.

RECOMMENDATION

The ARMB directs staff to conduct a search for a passive fixed income investment product benchmarked to the Bloomberg Barclays U.S. Aggregate Bond Index and bring recommendations to the ARMB at a future meeting.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Callan Investment Structure Evaluation
Diversified Real Assets

ACTION: _____

DATE: March 3, 2017

INFORMATION: X

BACKGROUND

On February 18, 2016, the ARMB directed staff to engage Callan to conduct a governance and quality review of the Defined Contribution Retirement Plans, Deferred Compensation Plan, and Alaska Supplemental Annuity Plan (collectively called Plans). The review was to focus on seven priorities including an evaluation of the investment structure available to participants in the Plans.

On September 30, 2016, Callan presented the results of their review to the ARMB.

The Plans currently offer the U.S. Treasury Inflation Protected Securities (TIPS) Index Fund and the U.S. Real Estate Investment Trust (REIT) Index Fund both managed by SSgA.

As of December 31, 2016, approximate participant assets invested in the U.S. Treasury Inflation Protected Securities Index Fund were \$48 million and the U.S. Real Estate Investment Trust Index Fund were \$82 million.

Callan Recommendation:

Combine the existing TIPS and REIT options into a single multi-asset class real asset fund.

Staff recommends the TIPS and REIT options remain as individual investment options in the Plans. Staff agrees that a multi-asset class real asset fund should be added to the participant's investment option menu at a time in the future. Staff also agrees that the current TIPS and REIT options should be individually considered as components of the real asset fund. Until a multi-asset class real asset fund is added, participants should continue to have access to the TIPS and REIT options.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Callan Investment Structure Evaluation
Non-U.S. Equity

ACTION: _____

DATE: March 3, 2017

INFORMATION: **X**

BACKGROUND

On February 18, 2016, the ARMB directed staff to engage Callan to conduct a governance and quality review of the Defined Contribution Retirement Plans, Deferred Compensation Plan, and Alaska Supplemental Annuity Plan (collectively called Plans). The review was to focus on seven Priorities including an evaluation of the investment structure available to participants in the Plans.

On September 30, 2016, Callan presented the results of their review to the ARMB.

The Plans currently offer the All Country World Equity Ex-U.S. Index Fund managed by SSgA and the multi-manager International Equity Fund which contains managers Brandes Investment Partners and Allianz Global Investors.

As of December 31, 2016, approximate participant assets invested in the All Country World Equity Ex-U.S. Index Fund were \$85 million and the International Equity Fund were \$149 million.

Callan Recommendation:

Combine the passive international fund with the active counterpart into a single multi-manager offering.

Staff recommends the All Country World Equity ex-U.S. Index Fund and the multi-manager International Equity Fund remain in the Plans as stand-alone options.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Callan Investment Structure Evaluation
U.S. Large and All Cap Equity

ACTION: _____

DATE: March 3, 2017

INFORMATION: **X**

BACKGROUND

On February 18, 2016, the ARMB directed staff to engage Callan to conduct a governance and quality review of the Defined Contribution Retirement Plans, Deferred Compensation Plan, and Alaska Supplemental Annuity Plan (collectively called Plans). The review was to focus on seven priorities including an evaluation of the investment structure available to participants in the Plans.

On September 30, 2016, Callan presented the results of their review to the ARMB.

The Plans currently offer the Russell 3000 Index Fund managed by SSgA, the S&P 500 Index Fund managed by SSgA and BlackRock, and the U.S. Small Cap Trust managed by T.Rowe Price. In the Defined Contribution Retirement Plans and the Alaska Supplemental Annuity Plan the S&P 500 Index Fund is managed by SSgA and in the Deferred Compensation Plan the S&P 500 Index Fund is managed by BlackRock.

As of December 31, 2016, approximate participant assets invested in the Russell 3000 Index Fund were \$130 million, the S&P 500 Index Funds were \$659 million and the U.S. Small Cap Trust were \$343 million.

Callan Recommendation:

Map assets from the Russell 3000 to the S&P 500 Index.

Staff recommends the Russell 3000 Index Fund remain in the Plans as a stand-alone option.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Callan Investment Structure Evaluation
Socially Responsible

ACTION: _____

DATE: March 3, 2017

INFORMATION: X

BACKGROUND

On February 18, 2016, the ARMB directed staff to engage Callan to conduct a governance and quality review of the Defined Contribution Retirement Plans, Deferred Compensation Plan, and Alaska Supplemental Annuity Plan (collectively called Plans). The review was to focus on seven priorities including an evaluation of the investment structure available to participants in the Plans.

On September 30, 2016, Callan presented the results of their review to the ARMB.

The Plans currently offer the Allianz/RCM Socially Responsible Investment Fund managed by Allianz Global Investors (AGI).

As of December 31, 2016, approximate participant assets invested in the Allianz/RCM Socially Responsible Investment Fund were \$59 million.

Callan Recommendation:

Remove the socially responsible fund.

Staff recommends the Socially Responsible Investment Fund remain in the Plans as a stand-alone option.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Callan Investment Structure Evaluation
Self-Directed Brokerage

ACTION: _____

DATE: March 3, 2017

INFORMATION: **X**

BACKGROUND

On February 18, 2016, the ARMB directed staff to engage Callan to conduct a governance and quality review of the Defined Contribution Retirement Plans, Deferred Compensation Plan, and Alaska Supplemental Annuity Plan (collectively called Plans). The review was to focus on seven priorities including an evaluation of the investment structure available to participants in the Plans.

On September 30, 2016, Callan presented the results of their review to the ARMB.

The Plans currently do not offer participants a self-directed brokerage window.

Callan Recommendation:

Add a brokerage window.

Staff recommends not adding a self-directed brokerage window at this time.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Callan Target Date Suitability Study
Glide Path Risk

ACTION: _____

DATE: March 3, 2017

INFORMATION: X

BACKGROUND

On February 18, 2016, the ARMB directed staff to engage Callan to conduct a governance and quality review of the Defined Contribution Retirement Plans, Deferred Compensation Plan, and Alaska Supplemental Annuity Plan (collectively called Plans). The review was to focus on seven priorities including an evaluation of the Plans' target date fund glide path suitability.

On September 30, 2016, Callan presented the results of their review to the ARMB.

The Plans currently offer 11 target date fund options called Alaska Target Date Trusts that are managed by T.Rowe Price. The target date funds currently span expected retirement dates from 2010 to 2060 in five year increments.

As of December 31, 2016, participant assets invested in target date funds totaled approximately \$1,110 million.

Callan Recommendation:

Given the high predicted replacement ratios along with the fact that there is some overlap between the SBS and PERS plan populations, the Plans could explore whether there is room to take less risk throughout the glide path and still reach successful outcomes with a reasonable degree of certainty.

Staff recommends the risk profile of the target date funds not be altered to take less risk throughout the glide path.

ALASKA RETIREMENT MANAGEMENT BOARD

SUBJECT: Callan Target Date Suitability Study
Glide Path and Implementation Review
Periodicity

ACTION: X

DATE: March 3, 2017

INFORMATION:

BACKGROUND

On February 18, 2016, the ARMB directed staff to engage Callan to conduct a governance and quality review of the Defined Contribution Retirement Plans, Deferred Compensation Plan, and Alaska Supplemental Annuity Plan (collectively called Plans). The review was to focus on seven priorities including an evaluation of the Plans' target date fund glide path suitability.

On September 30, 2016, Callan presented the results of their review to the ARMB.

The Plans currently offer 11 target date fund options called Alaska Target Date Trusts that are managed by T.Rowe Price. The target date funds currently span expected retirement dates from 2010 to 2060 in five year increments.

As of December 31, 2016, participant assets invested in target date funds totaled approximately \$1,110 million.

Callan Recommendation:

On a periodic basis revisit the glide path and implementation of the funds given the Plans' underlying demographics and plan design.

Staff recommends revisiting the glide path and implementation of the target date funds every five years absent a triggering event.

RECOMMENDATION

The ARMB directs staff to revisit the glide path and implementation of the target date funds every five years absent a triggering event.

ALASKA RETIREMENT MANAGEMENT BOARD
M E M O R A N D U M

To: ARMB Trustees
From: Judy Hall
Date: February 17, 2017
Subject: Financial Disclosures

As required by AS 37.10.230 and Alaska Retirement Management Board policy relating to investment conduct and reporting, trustees and staff must disclose certain financial interests. We are hereby submitting to you a list of disclosures for individual transactions made by trustees and staff.

Name	Position Title	Disclosure Type	Disclosure Date
Scott Jones	Comptroller	Equities	12/1/16
Victor Djajalie	Fixed Income Manager	Equities	1/5/17 1/19/17

Alaska Retirement Management Board
2017 Meeting Calendar

March 1 – Wednesday	Committee Meetings: Actuarial Audit Defined Contribution Plan
March 2-3 Thursday-Friday Juneau	*Review Capital Market Assumptions *Manager Presentations
April 19 – Wednesday	Committee Meetings: Actuarial Committee
April 20-21 Thursday-Friday Anchorage	*Adopt Asset Allocation *Performance Measurement – 4 th Quarter *Buck Consulting Actuary Report *GRS Actuary Certification *Review Private Equity Annual Plan *Manager Presentations
June 21 – Wednesday	Committee Meetings: Actuarial Audit
June 22-23 Friday Anchorage	*Final Actuary Report/Adopt Valuation *Performance Measurement – 1 st Quarter *Manager Presentations
October 4 – Wednesday	Committee Meetings: Actuarial Audit Budget Defined Contribution
October 5-6 Thursday-Friday Anchorage	*Audit Results/Assets – KPMG *Approve Budget *Performance Measurement – 2 nd Quarter *Real Estate Annual Plan *Real Estate Evaluation – Townsend Group *Manager Presentations
November ____	Audit Committee
December 6 – Wednesday	Committee Meetings: Actuarial Audit
December 7-8 Thursday-Friday Anchorage	Audit Report - KPMG Performance Measurement – 3 rd Quarter Manager Review (Questionnaire) Private Equity Review *Manager Presentations